

# Model UHF-R® Wireless Systems User Guide



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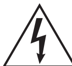
## UHF-R® 无线系统 型号用户指南


27CH14492 (Rev. 2)
Printed in U.S.A.

N108

# ! IMPORTANT SAFETY INSTRUCTIONS !

1. READ these instructions.
2. KEEP these instructions.
3. HEED all warnings.
4. FOLLOW all instructions.
5. DO NOT use this apparatus near water.
6. CLEAN ONLY with dry cloth.
7. DO NOT block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. DO NOT install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. DO NOT defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. PROTECT the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. ONLY USE attachments/accessories specified by the manufacturer.
12.  USE only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. UNPLUG this apparatus during lightning storms or when unused for long periods of time.
14. REFER all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. DO NOT expose the apparatus to dripping and splashing. DO NOT put objects filled with liquids, such as vases, on the apparatus.
16. The MAINS plug or an appliance coupler shall remain readily operable.
17. The airborne noise of the apparatus does not exceed 70dB (A).
18. Apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.
19. To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
20. Do not attempt to modify this product. Doing so could result in personal injury and/or product failure.

 This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.

 This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

WARNING: Voltages in this equipment are hazardous to life. No user-serviceable parts inside. Refer all servicing to qualified service personnel. The safety certifications do not apply when the operating voltage is changed from the factory setting.

**WARNING:** This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

**重要安全事项!**

1. 必须阅读这些注意事项。
2. 必须保留这些注意事项。
3. 必须注意所有警告内容。
4. 必须遵循所有注意事项。
5. 不要在靠近水的地方使用本设备。
6. 只能用干布擦拭设备。
7. 不要堵塞任何通风口。 遵循制造商的说明进行安装。
8. 不要将本设备安装在任何热源附近，如散热器、调温器、火炉或其它可能产生热量的装置（包括功率放大器）。
9. 不要破坏带极性或接地类型插头的安全功能。 极性插头带有两个插片，其中一个较另一个宽。 接地类型插头带有两个插片和第三个接地插脚。 较宽的插片或第三个插脚是为安全目的设置的。 如果提供的插头无法插入您的插座，请向电工咨询如何更换过时的插座。
10. 保护电源线防止被脚踩踏或被夹紧，尤其是在插头、方便插座和机身电源线引出处。
11. 只能使用制造商指定的连接件/附件。
12. 只能使用制造商指定的或随设备售出的手推车、支座、三角架、托架或支撑台。 如果使用手推车，在移动装有设备的手推车时应注意安全，避免设备翻落。
13. 在雷电天气或长时间不使用时，应拔出设备的插头。
14. 所有维修均应由合格的维修人员执行。 在设备因以下情况被损坏时，应进行维修：电源线或插头损坏、液体泼溅到设备或异物进入设备，设备暴露在雨水或潮湿环境中而无法正常工作，或摔落到地上。
15. 不要将本设备暴露在可能滴水和溅水的地方。 不要将装有液体的容器（如花瓶等）放在本设备上。
16. 电源插头或电器转接头应保持在随时可用状态。
17. 本装置的空气噪声低于 70dB (A)。
18. 应将符合 I 类标准的设备连接到带有接地保护装置的主电源插座。
19. 为降低起火或电击危险，不要将本设备暴露在雨中或潮湿环境下。
20. 不要嘗試改裝本產品。這樣做會導致人身傷害和/或產品故障。

这个符号表示本设备中存在可能导致触电的危险电压。

这个符号表示本设备附带的说明书中具有重要的操作和维护说明。

警告： 此设备中的电压具有致命危险。 设备内部没有用户可维修的部件。 所有维修均应由合格的维修人员执行。 如果改变了厂方设置的工作电压，则安全合格证书不再适用。

## Contents

# Feature Overview

The UHF-R® Wireless Microphone System uses the latest wireless technology, delivers outstanding audio clarity, and is rugged and reliable. It is easy to set up and operate with advanced features for professional installations requiring multiple wireless microphone systems.

## Frequency Band Selection

Shure offers wireless systems in a selection of bands that conform to the different government regulations of specific nations or geographic regions. These regulations help limit radio frequency (RF) interference among different wireless devices and prevent interference with local public communications channels, such as television and emergency broadcasts.

The system's band and frequency range are identified on the face of the receiver and transmitter. For example, "H4 518–578 MHz."

For information on bands available in your area, consult your local dealer or phone Shure. More information is also available at Shure's website (www.shure.com).

## Groups and Channels

To transmit audio through a wireless system, the transmitter and receiver must be set to the same radio frequency, or channel. A wide selection of channels allows more microphones to be used at the same time, since each microphone must operate on a different channel. It also provides a greater choice of open channels—those that are free from interference from television broadcasts, electronic devices, or other wireless systems.

A *group* is a selection of compatible channels. Wireless microphones work better together when set to channels in the same group.

## Automatic Frequency Selection

The following features scan the RF environment to find the best group and channel settings for a particular installation.

- **Group Scan**—finds the group with the most open channels, then sets all networked receivers to channels in that group.
- **Channel Scan**—finds the first open channel in the currently selected group and sets the receiver to that channel.

Follow the steps on page 11 for instructions on using these features.

## Automatic Transmitter Sync

This feature automatically transfers the group and channel settings from a receiver to a transmitter. You can also program other transmitter settings on a receiver and transfer those settings too. See page 15.

## Interface Lock

This feature locks the receiver and transmitters so that users cannot change settings. The transmitter power switch can also be disabled so that the transmitter remains on if the power switch is accidentally toggled during a performance.

## Audio Gain Structure

The following settings allow you to adjust audio gain throughout the system:

- **Sensitivity** (bodypack only). A 25 dB range of gain adjustment at the bodypack transmitter input.
- **Transmitter Gain.** A 30dB range of audio gain adjustment within the transmitter (affects audio level at the receiver, as indicated by the **Audio** LEDS.)
- **Output Level.** 32 dB of attenuation at the receiver output, plus a mute setting.
- **Mic/Line switch.** –30 dB pad for matching audio levels at the receiver XLR output.

## Networking

Each receiver has an RJ-45 port on the back for connecting to other receivers over an Ethernet network. Networking receivers allows you to automatically set channels for all the receivers with a single group scan command. You can also control and monitor all networked receivers through the Shure Wireless Workbench PC software.

## RF Distribution Ports

Use the RF distribution ports to share the signal from a single pair of antennas with up to 10 single or dual receivers within the same frequency band. The RF ports eliminate the need for antenna splitters or distribution amplifiers. Active circuitry minimizes insertion losses, preserving signal quality. Input filtering keeps the signal free from out-of-band interference. Distribution circuitry is active only when additional receivers are connected to the RF distribution ports. When not used, the port circuitry is bypassed, allowing the receiver to be used as a stand-alone component.

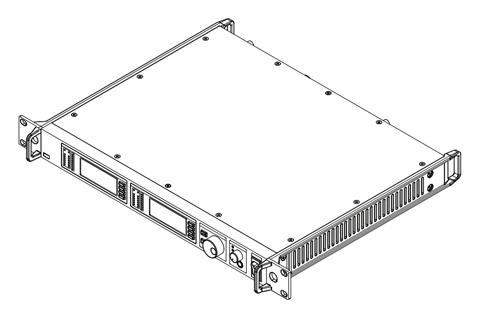
## Shure Wireless Workbench Software

The Shure Wireless Workbench software on the supplied CD includes a variety of useful tools for installing and managing multiple wireless systems. Simply install the software on your computer and connect it to a network of receivers to monitor and control receivers and transmitters throughout the network. (See page 12 for more information on networking).

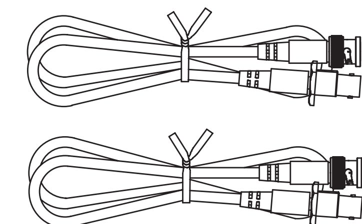
Instructions on using the Wireless Workbench software are available in the online help files after you install the software.

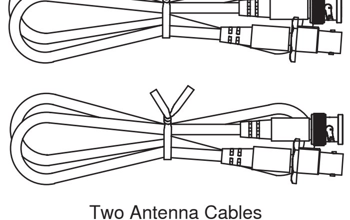
# System Components

## All systems include:

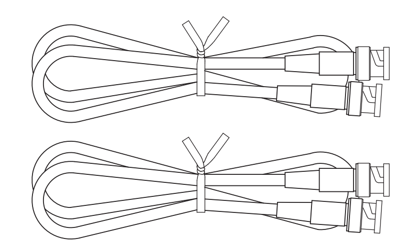


UR4S+ or UR4D+ Receiver
(UR4D+ pictured)

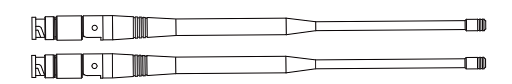




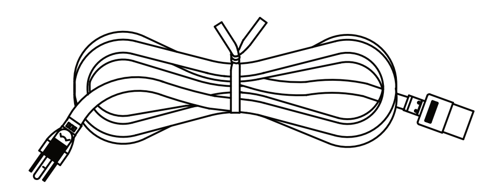
Two Antenna Cables



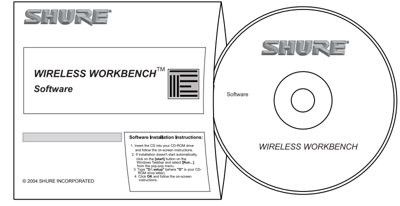
Two RF Distribution Cables



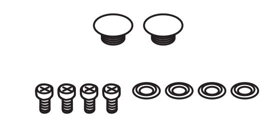
Two 1/2 Wave Antennas



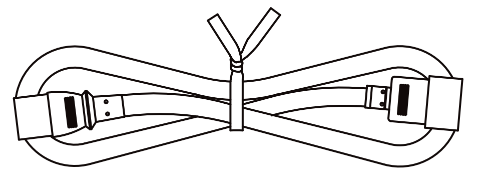
IEC Power Cable



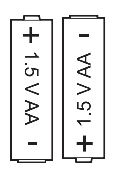

Shure's Wireless Workbench Software



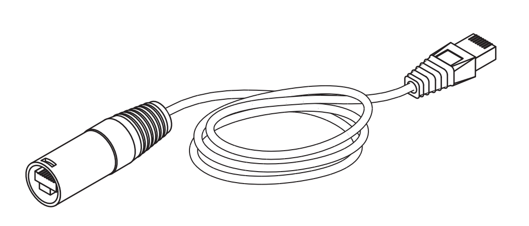
2 Antenna hole plugs
4 Rack Mount Screws with Washers



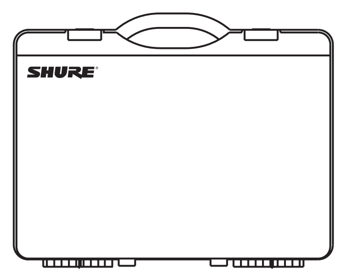
IEC Power Extension Cable




AA Batteries



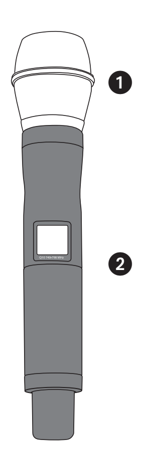
Ethernet Network Cable with "Ruggedized" plug

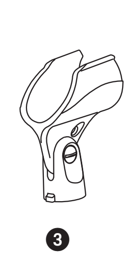



Transmitter Carrying Case

## Handheld Systems Include:

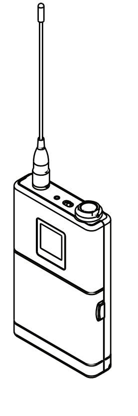
1. Microphone Head (choice of SM58®, SM86, Beta 58A®, Beta 87A™, Beta 87C™ or KSM9/BK, KSM9/SL)
2. UR2 handheld transmitter
3. Microphone clip



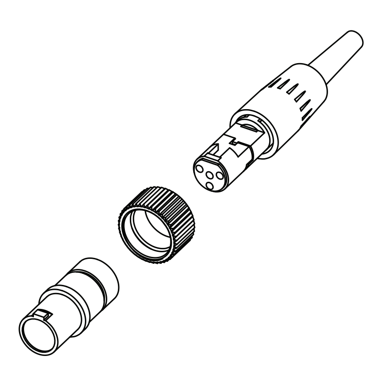


## Bodypack Systems Include:

- UR1 Bodypack Transmitter
- Threaded TA4F Adapter

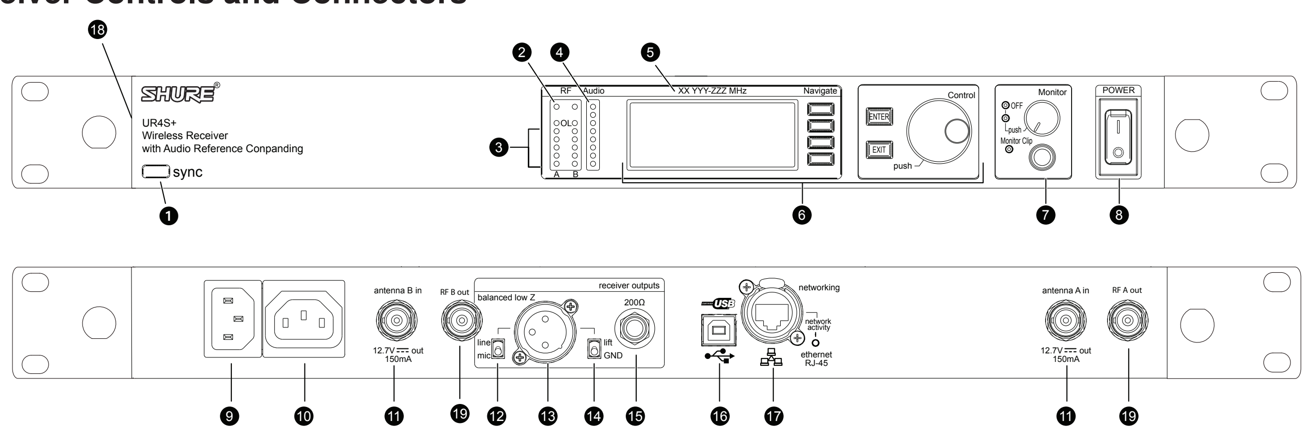


UR1



Threaded TA4F Adapter

# Receiver Controls and Connectors




❶ **SYNC** Infrared (IR) port. Transmits group, channel, and other settings to a transmitter. See page 15.

❷ Squelch LEDs.

- Blue (On) = Transmitter signal detected
- Off = no signal or signal squelched because of poor reception or no tonekey

NOTE: The receiver will not output audio unless at least one blue LED is illuminated.

❸ **RF** LEDs. Indicate RF signal strength from the transmitter at each antenna and diversity condition.

- Amber = normal
- Red = overload (greater than –25 dBm)

❹ **Audio** LEDs. Indicate audio signal strength from transmitter.

- Green = signal present
- Yellow = normal peak
- Red = overload

To correct this level, adjust the transmitter gain.

❺ Indicates the name and range of receiver frequency band.

❻ LCD Interface. Provides a convenient way to program the receiver from the front panel (see detail on next page).

❼ **Monitor.** 1/4” output jack and volume knob for headphones.

- **Monitor Clip** LED indicates headphone audio is clipping.
- Dual models: Push the knob to switch from receiver one to receiver two.

❽ **Power** switch**.** Powers the unit on and off.

❾ AC mains power input, IEC connector. 100–240 Vac.

❿ **AC mains power passthrough (unswitched). Use IEC extension cables to connect up to five UR4+ receivers to a single AC power source.**

⓫ Diversity antenna inputs A and B.

Note: Antenna inputs are DC biased. Use only antenna combiners and accessories listed in page 19. Some types of antenna splitters or other products may short the DC power and damage the receiver.

⓬ **Mic**/**Line switch**. Changes output level 30 dB (XLR output only).

⓭ Electrically balanced XLR output jack

⓮ **Lift**/**GND** switch. Lifts ground from Pin 1 of the XLR connector (default = **GND**).

⓯ Impedance balanced 1/4” output jack (200Ω)

⓰ USB jack for computer interface.

⓱ RJ-45 jack for Ethernet network interface. Accepts both regular and “ruggedized” RJ-45 plugs.

⓲ Temperature-activated fan ensures top performance in high temperature environments. Clean fan screen as needed to remove dust.

⓳ The RF distribution ports pass the RF signal from one receiver to the next, allowing a maximum of 10 receivers to share a single pair of antennas.

**Note:** The diagram above represents the UR4S single channel receiver. The UR4D dual channel receiver is functionally identical to the UR4S, adding a second LCD interface and set of output jacks for channel 2.

# Receiver LCD Interface



## Menu Access

Press the **Navigate** key next to the menu item you want to select.

## Accept Changes

After changing a parameter, the **ENTER** button flashes. Press it to save the value.

SHURE Radio
524-025 MHz TV: 32 Audio
G: 3 Ch: 1 Out: -0dB Util
+12 dB Hi F, P, FP Sync
navigate
control
enter
exit
push

## Cursor Control

Push the **Control** *wheel* to move the cursor to the next item.

Turn the **Control** *wheel* to change a parameter value.

## Transmitter Status Display

Everything under the dotted line reflects the settings for the transmitter, if present. (main title screen only).

## Exit/Cancel

Press the **Exit** button to cancel changes and return to the previous menu.

# Receiver Parameters

Use the following instructions to set parameters through the LCD interface.

NOTE: After adjusting a parameter, you must press the flashing ENTER button to accept the change.

## Group and Channel

Menu: Radio

- Push the **Control** *wheel* to move the cursor to the Group (G) or Channel (Ch) parameter.
- Turn the Control wheel to change the parameter.

## Frequency

Menu: Radio

- Push the **Control** *wheel* to move the cursor to the integer value (524.025 MHz) or fractional value (524.025) .
- Turn the **Control** *wheel* to change the value.

## Automatic Transmitter Sync

Menu: Sync

- See page 15.

## Receiver Name

Menu: Util

- Turn the **Control** *wheel* to change the letter.
- Push the **Control** *wheel* to move to the next letter.

## Output Level

Menu: Audio

This setting adjusts the signal level at the XLR and 1/4" audio output jacks.

- Turn the **Control** *wheel* to change the relative level in dB. (0 dB to –32 dB).
- Turn the wheel all the way down to mute the outputs.

## Squelch

Menu: Radio > Squelch

- Turn the **Control** *wheel* to change the parameter

## Receiver Lock

When locked, the receiver settings cannot be changed from the front panel. However, you can still navigate the LCD menu to view the settings (and turn the lock off).

Menu: Util > Lock

- Turn the **Control** wheel to toggle the lock on or off (ON or OFF).

## LCD View

Menu: Util > Title

- Turn the **Control** wheel to mark an item for display.
- Push the **Control** wheel to move to the next item.

## LCD Contrast

Menu: Util > Contrast

- Turn the **Control** wheel to increase or decrease contrast.

## Tonekey

Menu: Radio > Squelch > Tonekey

Tonekey squelch mutes the outputs unless the receiver detects a transmitter. Tonekey should be left on (On) except for certain troubleshooting operations.

## Network Parameters

**NOTE:**

- The receiver reboots after you press **ENTER** to accept network parameter changes
- In dual models (UR4D+), these settings affect both receivers (the dual receiver is treated as a single network device).

**Set the Receiver Network Mode**

Menu: Util > Network

1. Push the **Control** wheel to move the cursor to the Mode parameter.
2. Turn the **Control** wheel to set the receiver to one of the following values:

- DHCP: use this setting when connecting the receiver to a DHCP server.
- Manual: allows you to set the receiver to a specific IP address or subnet.

**IP Address and Subnet**

Menu: Util > Network

**NOTE:** To change these settings, the network mode must be set to Manual.

1. Push the **Control** wheel to move the cursor to any of the following parameters:

- IP (IP address)
- Sub (Subnet mask)

2. Turn the **Control** wheel to change the value.

## Device ID

Assists in identifying receivers through the Wireless Workbench Software (has no effect on network identification).

Menu: Util > Network

1. Push the **Control** wheel to move the cursor to the DevID parameter.
2. Turn the **Control** wheel to set the receiver to change the value.

Custom Groups This feature allows you to create your own groups of frequencies.

**Creating new groups...**

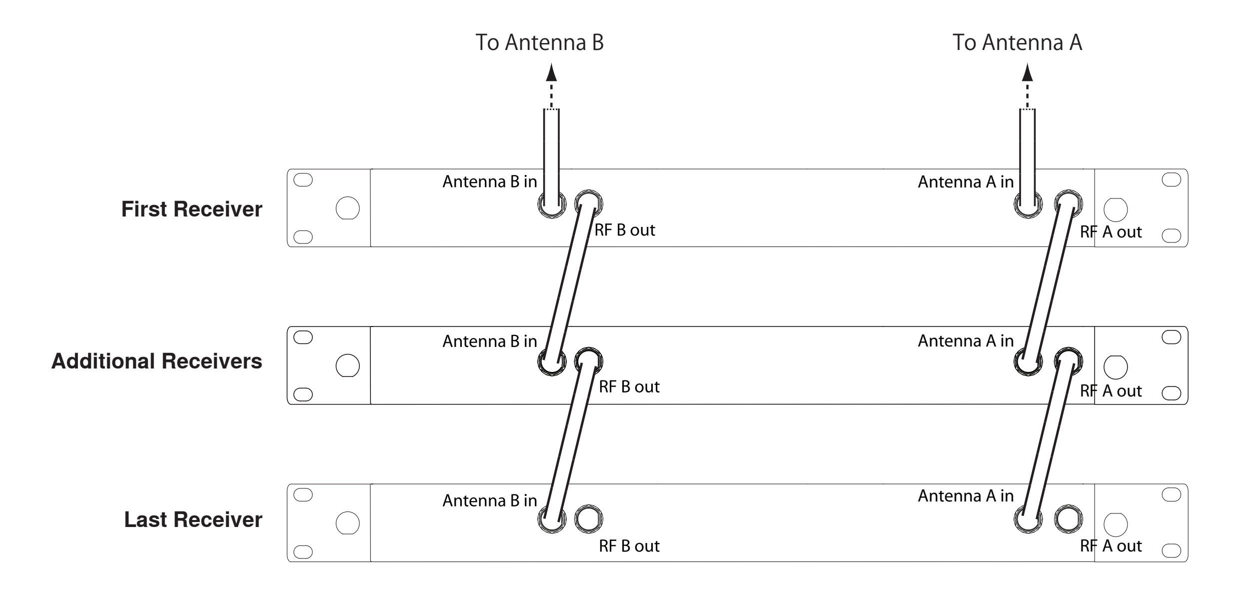
Menu: Radio > Custom

1. Turn the **Control** wheel to select a custom group number (U1, U2, U3, etc.)
2. Push the **Control** wheel to move to the Channel parameter and turn it to select a channel (01, 02, 03, etc.)
3. Push the **Control** wheel to move to the Freq parameter and select a frequency for that channel.
4. Push the NEXT menu key to select a frequency for the next channel in that group.

## Connecting Multiple Receivers to the RF Distribution Ports

The RF distribution ports pass the RF signal from one receiver to the next, allowing a maximum of 10 single or dual receivers to share a single pair of antennas.
Use the supplied RF distribution cables to connect the ports of each receiver as shown.

NOTE: All receivers must be operating in the same frequency band.



# Automatic Frequency Selection

Follow these steps to use the channel scan and group scan features.

**Before you begin...**

- Install the receivers in the location where they will be used and power them on.
- Mute all inputs on mixing devices connected to receivers.
- Turn off all bodypack or handheld transmitters for the systems you are setting up.
- Turn on potential sources of interference such as other wireless systems or devices, computers, CD players, effects processors, and digital rack equipment so they are operating as they would be during the presentation or performance.

**Single Receiver**

1. Select Radio > Scan > Chan Scan using the **Navigate** keys on the receiver LCD interface.
2. Turn the **Control** wheel to select a group.
3. Press Chan Scan. The display indicates that the receiver is searching. Once it has finished, it displays the selected channel.
4. Press the flashing **ENTER** button to accept the suggested channel.
5. Sync the transmitter (see page 15).

**Networked or Dual Receivers**

With networked or dual receivers, you can take advantage of the group scan feature to set group and channel settings for all the receivers at the same time. (See page 12 for instructions on networking.)

**Perform a group scan from any receiver...**

1. Select Radio > Scan> Group Scan using the **Navigate** keys on the receiver LCD interface. The display indicates that the receiver is searching (Scan In Progress). Once it has finished, it displays the group with the most open channels.
2. If you wish, turn the **Control** wheel to change groups. The number of open channels for each group is displayed.
3. Press the flashing **ENTER** button to set all receivers to open channels in that group.

   **NOTE:** The group scan feature only works for receivers in the same frequency band. For example, if you did a group scan on a “H4” band receiver, all “H4” band receivers would be set up, but not “J5” band receivers.

# Multiple Receivers—Not Networked

If your receivers are not networked (or in different bands), the group scan cannot automatically set their group and channel settings. However, you can still take advantage of the group scan feature to find the group with the most open channels and the channel scan feature to find open channels in that group.

**Find the group with the most open channels...**

Perform a group scan using the steps for a networked receiver (above). However, make a note of the selected group before pressing the flashing **ENTER** button to accept it.

**Set the receivers to open channels in that group...**

Perform a channel scan on the remaining receivers using the steps for a single receiver (above). Make sure to select the same group for each receiver before performing the channel scan.

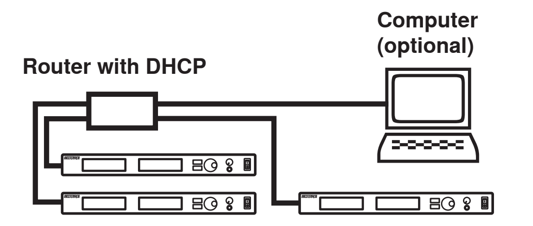
> **IMPORTANT:** After setting the channel for the first receiver, immediately sync the transmitter for that receiver and leave it on so that the next receiver detects that channel during its channel scan. Otherwise, all the receivers will be set to the same open channel.
>
> **NOTE:** Receivers in different bands (H4, J5, L3, etc.) do not need to be set to the same group.

# Networking Receivers

## Basic Network

Connect receivers to an Ethernet router with DHCP service. Use Ethernet switches to extend the network for larger installations.

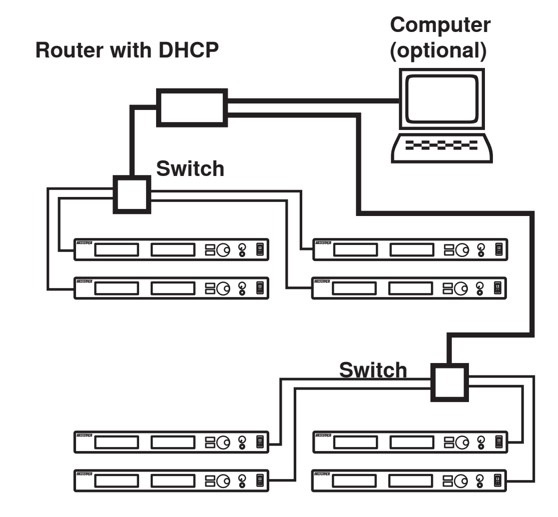
Use the receiver's default network setting (Util > Network > Mode = DHCP).




## Accessing the Network with a Computer

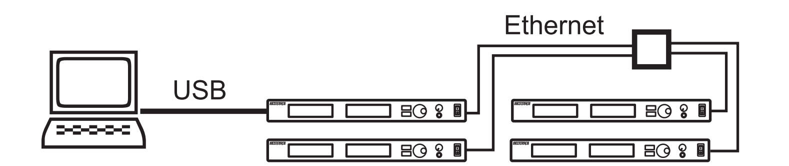
If you want to use the Wireless Workbench software, connect your computer to the network and install the software from the CD that came with the receiver. Make sure your computer is configured for DHCP (from Control Panel, click Network Connections. Double-click on Local Area Connection. Select Internet Protocol (TCP/IP) and click Properties. Select Obtain IP address automatically and Obtain DNS server address automatically and click OK).

**NOTE:** Some security software or firewall settings on your computer can prevent you from connecting to the receivers. If using firewall software, allow connections on port 2201.




**Using USB...**

Connect the computer to the USB port on any of the receivers to access the whole network.



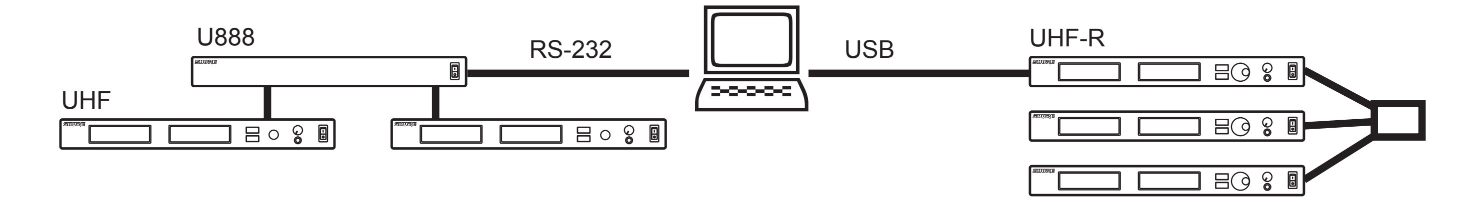

## Static IP Addressing

The receiver also supports static IP addressing. Assign your own IP addresses (Util > Network > Mode = Manual). See "Network Parameters" on page 10.

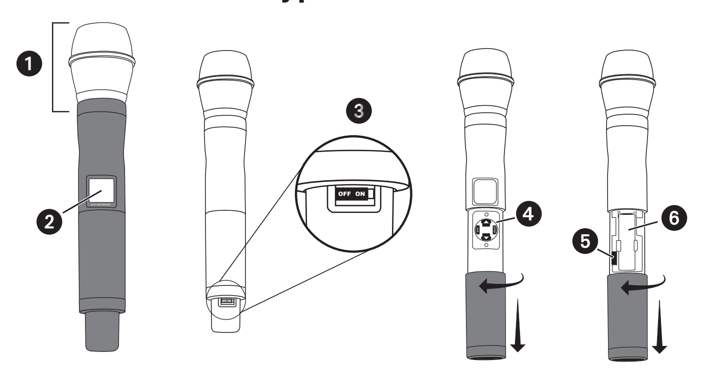
**NOTE:** Dual receivers use a single IP address, which may be set through either LCD interface.

## Existing UHF Network Installations

Both Shure's UHF-R receivers and legacy UHF receivers can be networked to the same PC and accessed using the latest Wireless Workbench software.



## Handheld and Bodypack Transmitter Controls and Connectors




1. Interchangeable microphone head (BETA 87A pictured).
2. LCD Panel.
3. Power Switch.
4. Control buttons for LCD interface.
5. Infrared (IR) port. See page 15.
6. Battery compartment.
7. Flexible Antenna.
8. Power LED.
9. 4-Pin Microphone Input Jack.
10. Reversible Belt Clip.

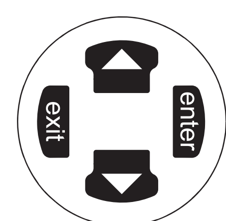
## Transmitter LCD Interface

SHURE INC.
G: 34 Ch: 21
524.025MHz
Gain +20dB

**Main Menu**

`Up Arrow Key.` Scroll up or increase a value.

`exit Key.` Move to the left, or exit without saving changes.




`enter Key.` Press to select parameters and accept the selected value.

`Down Arrow Key.` Scroll down or decrease a value.

## Transmitter Batteries

Transmitters operate on standard AA batteries. Turn off the transmitter before changing the batteries.

The battery fuel gauge displayed on the transmitter LCD gives an indication of remaining battery life, as shown below.

### UR1, UR2:

| Transmitter Display | Approximate Hours Remaining (alkaline batteries) | |
|---|---|---|
| | UR1/UR2 (Normal Power) | UR1/UR2 (High Power*) |
| | 7.5 to 9.5 | 5 to 6 |
| | 5.75 to 7.5 | 4 to 5 |
| | 4 to 5.75 | 3 to 4 |
| | 2 to 4 | 1.5 to 3 |
| | 15 minutes to 2 hours | 10 minutes to 1.5 hours |

* High power setting not available with models sold in countries that prohibit its use.

## Transmitter Parameters

Press **ENTER** from the main menu to access the following parameters:

G: 34 Ch: 21
524.025MHZ
Gain +20dB
SHURE INC.

**Group** (G) and **Channel** (Ch). Must match the receiver's settings.

**Frequency** (MHz). Manual frequency selection in 0.025 MHz increments.

**Gain** (Gain). Adjusts audio level from –10 dB to +20 dB

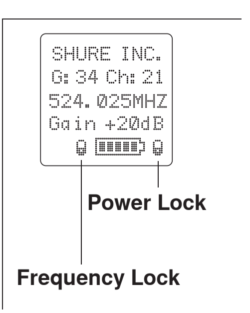
**Sensitivity** (Sens) (bodypack only).

Sets audio input to +15 dB, 0 dB, or –10 dB recommended for guitars.

**Name Display**. 12-digit ASCII.

Use the following key combinations to access additional features and parameters:

### Lock Indicators




**Hold** + **Top**

### LCD Panel

Changes LCD Panel

**Hold** + **Top**




### Frequency Lock

Toggles setting. When enabled, frequency cannot be changed, and a transmitter sync will not overwrite the frequency setting.

**Hold** + **Top**






### Power Lock

Toggles power lock. When locked, power switch does not turn off transmitter.

**Hold** + **Top**





### RF power level setting*

Use the arrow keys to select normal (10 mW) or high power (50/100 mW**). Use the normal power setting to conserve batteries or prevent RF overload at the receiver.

* High power setting not available with models sold in countries that prohibit its use.

** High power value varies with model.

## Setting Transmitter Gain

Adjust the transmitter gain and input sensitivity so that the **Audio** LEDs on the receiver peak within the yellow range during use. On the bodypack transmitter, you can change the sensitivity setting to compensate for different audio levels when connecting different instruments or microphones to the input.

To adjust gain, turn on the transmitter and press the **enter** button. Scroll down to the Gain parameter or the Sens parameter (bodypack only) and press enter again. Use the arrow keys to adjust the setting and press **enter** to save it (**Exit** cancels without saving).

## RF Safety Mode

This special feature temporarily mutes RF broadcast. This allows you to change frequency settings on a transmitter without accidentally "cutting in" on a channel being used by another transmitter.

1. Turn the transmitter off.
2. Hold down **exit** key while turning on the transmitter power (for handheld microphones, you need to pull the battery cover off the handle). The LCD flashes while the unit is in RF safety mode.
3. Change group and channel settings as you normally would—the transmitter will not broadcast.
4. Power the transmitter off and on to exit RF safety mode.

## Automatic Transmitter Sync

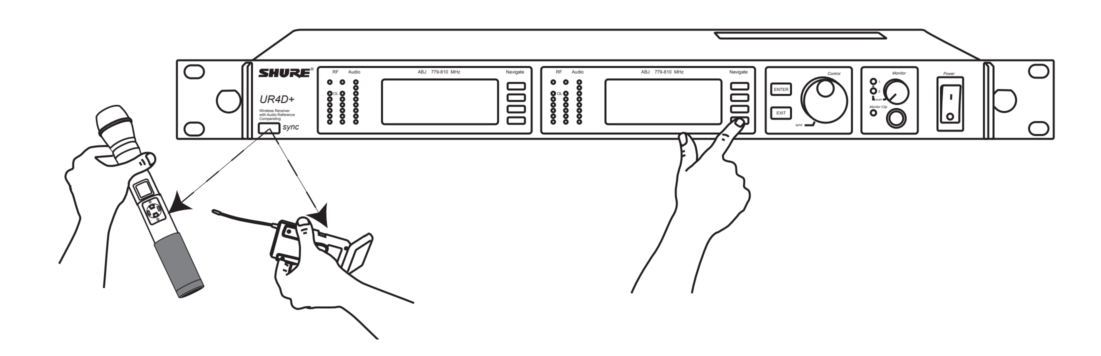
This feature automatically updates a bodypack or handheld transmitter's group and channel settings to match those of a selected receiver.

## To perform a transmitter sync...

1. Open the transmitter battery cover to display the infrared (IR) port.
2. With the IR port exposed to the receiver, select Sync > sync from the receiver LCD interface.

The display on the receiver indicates whether the sync was successful. If the sync fails, try again, making sure that the IR port on the transmitter is exposed and directly faces the IR port on the receiver.

**NOTE:** Close the battery door before performing a sync on other transmitters.




## To transfer other transmitter settings...

Optionally, you can transfer other transmitter settings from a receiver when you perform a sync. Use the following steps:

1. Select Sync > Setup from the receiver LCD interface.
2. Turn the **Control** wheel to change parameter settings.
3. Push the **Control** wheel to move to the next parameter.
4. Push the flashing **ENTER** button to save the settings.

The transmitter settings you set on the receiver remain for future syncs.

**NOTE:** If you don't want the sync to send a setting, set the parameter to No Change

**Available Settings...**

The following settings are available from the Sync > Setup menu:

- Sensitivity (Sens) bodypack only
- Gain (Gain)
- RF Power (Pwr)
- Power and Frequency Lock (Lock), which has the following values:
  - Power lock only: (Pwr Only)
  - Frequency lock only: (Freq only)
  - Both: (Freq and Pwr)
  - Neither: (Unlocked)
- Custom Groups (CG):
  - On (ON): Send custom groups to transmitters during sync
  - Off (OFF): Do not send custom groups (reduces sync time)

# Troubleshooting

| Issue | See Solution... |
|---|---|
| **No sound** | Power, Cables, or RF |
| **Faint Sound or Distortion** | Gain |
| **Lack of range, unwanted noise bursts, or drop outs** | RF |
| **Cannot turn transmitter off or change frequency settings, or can't program receiver** | Interface Locks |
| **Excessive hum or buzzing** | Ground lift |

## Power

Make sure that the transmitter and receiver are receiving sufficient voltage. The receiver requires at least 90 Vac. Check the battery indicator on the transmitter and replace battery if necessary.

## Gain

Adjust the transmitter gain and sensitivity settings (see page 14) or the receiver output level (page 9), or toggle the **mic/line** switch on the back of the receiver.

## Cables

Check that all cables and connectors are in working order.

## Ground Lift

Lifting the ground on pin 1 of the XLR output on the receiver can sometimes remove hum or buzz in the audio signal. Set the **GND/LIFT** switch on the receiver to **LIFT** if you are using the XLR connector.

## Interface Locks

Both the transmitter and receiver can be locked to prevent accidental changes. On transmitters, look for a lock symbol on the LCD and use the key combinations illustrated on page 14 to turn it off.

To turn off the receiver interface lock, see page 9.

## Increasing Range

If the transmitter is more than 6 to 60 m (20 to 200 ft) from the receiver antenna, you may be able to increase range by doing one of the following:

- Reduce interference (see above)
- Increase transmitter RF power level (see page 14).
- Use an active directional antenna, antenna distribution system, or other antenna accessory to increase RF range (see page 19).

## Radio Frequency (RF)

**Using the RF LEDs**

If neither blue **RF** LED is illuminated, then the receiver is not detecting the presence of a transmitter.

The amber **RF** LEDs indicate the amount of signal being received. This signal could be from the transmitter, or it could be from an interfering source, such as a television broadcast. Turn the transmitter off. If more than one or two of the amber **RF** LEDs are still illuminated, then that channel has too much interference, and you should try a different channel.

The red **RF** LED indicates RF overload. This will usually not cause a problem unless you are using more than one system at the same time, in which case, it can cause interference between systems.

**Eliminating RF Overload**

If you see the red **RF** LED on a receiver, reduce the transmitter RF power level (see page 14) or move the transmitter further away from the receiver—at least 6 m (20 ft). If you are using active antennas, reduce antenna or amplifier gain.

**Compatibility**

- Perform a transmitter sync, or make sure the transmitter and receiver are set to the same group and channel.
- Look at the label on the transmitter and receiver to make sure they are in the same band (H4, J5, L3, etc...).

**Reducing Interference**

- Use a different channel or perform an automatic group or channel scan (see page 11).
- For multiple systems, check that all systems are set to channels in the same group (systems in different bands do not need to be set to the same group).
- Maintain a line of sight between transmitter and receiver antennas
- Move receiver antennas away from metal objects or other sources of RF interference (such as CD players, computers, digital effects, network switches, network cables and Personal Stereo Monitor (PSM) wireless systems).
- Eliminate RF overload.

# SPECIFICATIONS

| Band | Range | Transmitter power (Nominal mW) | |
|---|---|---|---|
| | | Handheld UR2 | BodyPack UR1 |
| G1 | 470-530 MHz | 10 / 50 | 10 / 100 |
| G1E | 470-530 MHz | 10 / 50 | 10 / 50 |
| G7C | 470.125–509.875 MHz | 10 / 50 | 10 / 50 |
| H4 | 518-578 MHz | 10 / 50 | 10 / 100 |
| H4E | 518-578 MHz | 10 / 50 | 10 / 50 |
| J5 | 578-608, 614-638 MHz | 10 / 50 | 10 / 100 |
| J5E | 578-638 MHz | 10 / 50 | 10 / 50 |
| K4E | 606-666 MHz | 10 / 50 | 10 / 50 |
| L3 | 638-698 MHz | 10 / 50 | 10 / 100 |
| L3E | 638-698 MHz | 10 / 50 | 10 / 50 |
| M5E | 694-758 MHz | 10 / 50 | 10 / 50 |
| P8 | 710–790 MHz | 10 / 50 | 10 / 50 |
| P9 | 710–787 MHz | 10 / 50 | 10 / 50 |
| Q5 | 740-814 MHz | 10 / 50 | 10 / 50 |
| R9 | 790-865 MHz | 10 / 50 | 10 / 50 |
| Q6 | 740-752 MHz | 10 | 10 |
| A24 | 779-788 / 797-806 MHz | 10 | 10 |
| JBX | 806-810 MHz | 10 | 10 |
| Q10A | 740-787 MHz | 10 / 50 | 10 / 50 |
| R16 | 794-806 MHz | 10 / 50 | 10 / 50 |
| R18 | 794-806 MHz | 10 only | 10 only |
| X1 | 944-952 MHz | 10 / 50 | 10 / 100 |

**NOTE**

This Radio equipment is intended for use in musical professional entertainment and similar applications.

This Radio apparatus may be capable of operating on some frequencies not authorized in your region. Please contact your national authority to obtain information on authorized frequencies and RF power levels for wireless microphone products.

**RF Carrier Frequency Range**

470-865, 944-952 MHz depending on region

**Working Range**

**UR1, UR2**

150 m (500 ft.), under typical conditions

500 m (1600 ft) **line-of-sight, outdoors for a single system.**

**NOTE:** Actual working range depends on RF signal absorption, reflection and interference.

**Audio Frequency Response**

40 – 18,000 Hz, (+1 dB, –3 dB).

**NOTE:** Overall system frequency response depends on the microphone element

**Gain Adjustment Range**

UR1: –20 to +35 dB

–10 dB recommended for guitar

UR2: –10 to +20 dB

**Modulation**

FM (45 kHz max. deviation), compander system with pre- and de-emphasis

**RF Power Output**

See table above.

**Dynamic Range**

>105 dB, A-weighted

**Image Rejection**

>110 dB typical

**RF Sensitivity**

| UR4S+ | UR4D+ |
|---|---|
| –110 dBm Typical<br>12 dB SINAD | –107 dBm Typical<br>12 dB SINAD |
| –105 dBm Typical<br>30 dB SINAD | –102 dBm Typical<br>30 dB SINAD |

**Spurious Rejection**

>90 dB typical

**Ultimate Quieting (ref. 45 kHz deviation)**

>100 dB, A-weighted

**Signal Polarity**

Positive pressure on microphone diaphragm (or positive voltage applied to tip of WA302 phone plug) produces positive voltage on XLR output pin 2 with respect to XLR pin 3 and on the tip of the 1/4-inch output jack.

**System Distortion (ref. ± 45 kHz deviation, 1 kHz modulation)**

<0.3% Total Harmonic Distortion typical

**Power Requirements**

UR1, UR2: Two 1.5V AA batteries

UR4+:100 to 240 VAC, 50/60 Hz

**Current Drain**

UR1, UR2: 180 mA max. (normal RF power setting)

240 mA max. (high RF power setting)

UR4D+, UR4S+: 0.8 Amps max.

**Battery Life (Typical)**

UR1, UR2: 9.5 hours (normal RF power),

6 hours (high RF power)

**Operating Temperature Range**

–18° to +57° C (0° to +135°F)

**NOTE:** Battery characteristics may limit this range

**NOTE:** Electrical safety approval is based on a maximum ambient temperature of 35°C (95°F).

**Overall Dimensions**

UR1: 98 mm L x 60 mm W x 17 mm D (3.84 x 2.38 x 0.66 in.)

UR2/SM58: 261 mm L x 51 mm Dia. (10.27 x 2 in.)

UR2/SM86: 261 mm L x 51 mm Dia. (10.27 x 2 in.)

UR2/SM87A: 254 mm x 51 mm Dia. (10 x 2 in.)

UR2/KSM9/BK, UR2/KSM9/SL: 250 mm x 49 mm Dia. (9 7/8 x 1 15/16 in.)

UR2/BETA 58: 258 mm L x 51 mm Dia. (10.15 x 2 in.)

UR2/BETA 87A, UR2/BETA 87C: 254 mm x 51 mm Dia. (10 x 2 in.)

UR4S+/UR4D+: 44 mm H x 483 mm W x 366 mm D

(1.72 x 19.00 x 14.39 in.)

**Net Weight**

UR1: 97 g (3.4 oz.) without batteries

UR2/SM58: 356 g (12.6 oz.) without batteries

UR2/BETA 58: 314 g (11.1oz.) without batteries

UR2/SM86: 317 g (11.2 oz.) without batteries

UR2/SM87A: 298 g (10.5 oz.) without batteries

UR2/KSM9/BK, UR2/KSM9/SL: 410 g (14.5 oz.) without batteries

UR2/BETA 87A, U2/BETA 87C: 325 g (11.5 oz) without batteries

UR4S+: 5.0 kg (10.9 lbs)

UR4D+: 5.1 kg (11.2 lbs)

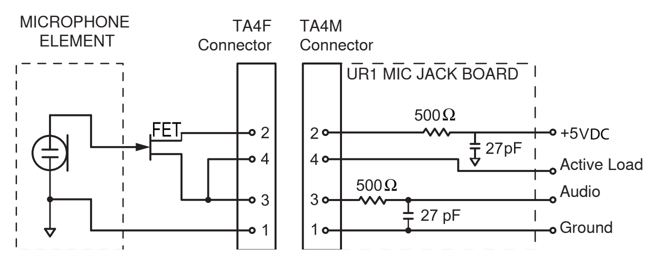
**Housing:**

UR1: Cast magnesium

UR2: Aluminum die-cast handle and aluminum machined battery cup

UR4S+, UR4D+: Galvanized steel

**Wiring for TA4F:**




NOTE: LAVALIER MIC TIES PINS 3 AND 4 TOGETHER—GUITAR CABLE DOES NOT.

# Inputs and Outputs

### UR1 Transmitter Audio Input

| | |
|---|---|
| **Connector:** | 4-Pin male mini connector (TA4M) |
| **Input Configuration:** | Unbalanced, active |
| **Maximum Input Level:** **(1 kHz, 1% THD)** | +10 dBu (sensitivity 0 dB)<br>+20 dBu (sensitivity –10 dB) |
| **TA4M Connector Pin Assignments:** | Pin 1: Ground<br>Pin 2: +5 Vdc bias<br>Pin 3: Audio, 200 kΩ<br>Pin 4: Tied through active load (on main board) to Ground.<br>(On instrument adapter cable, Pin 4 floats) |

### UR2 Transmitter Audio Input

| | |
|---|---|
| **Input Configuration:** | Unbalanced, active |
| **Actual Impedance:** | >1 MΩ |
| **Maximum Input Level:** **1 kHz, 1% THD** | +4.8 dBu |

### UR1 Transmitter RF Output

| | |
|---|---|
| **Connector:** | SMA |
| **Actual Impedance:** | 50 Ω |
| **Pin Assignments:** | Shell = Ground<br>Center = Signal |

### RF Distribution Ports

| | **RF IN** | **RF OUT** |
|---|---|---|
| Connector Type | BNC | BNC |
| Vdc Bias | 12 Vdc @ 150 mA | N/A |

### Receiver Input

| | **Antenna** | **Power** |
|---|---|---|
| **Connector Type:** | BNC | IEC |
| **Actual Impedance:** | 50 Ω | - |
| **Nominal Input Level:** | –95 to –30 dBm | 100-240 VAC, 50/60 Hz |
| **Maximum Input Level:** | –20 dBm | 240 VAC, + 10%, 50/60 Hz |
| **Pin Assignments:** | Shell = Ground<br>Center = Signal | IEC Standard |
| **Bias Voltage*** | 12 Vdc @ 150 mA maximum | N/A |

* For remote antenna amplifiers

### Receiver Audio Output

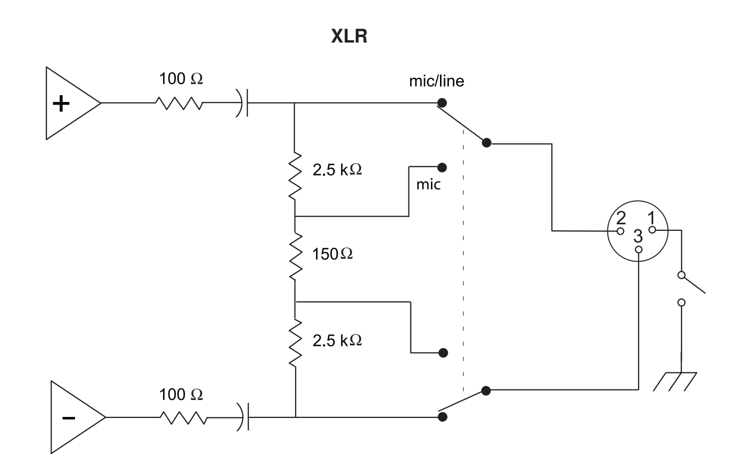
| | **Monitor (1/4” Headphone)** | **1/4” Phone** | **XLR** |
|---|---|---|---|
| **Output Configuration:** | Unbalanced mono, 1/4 inch | Impedance Balanced | Electrically Balanced |
| **Actual Impedance:** | 50 Ω | 200 Ω | 200 Ω (active balanced)<br>(150 Ω mic) |
| **Maximum Output Level:** | 1 Watt @ 63 Ω | +18 dBu | +24 dBu<br>(–6 dBu mic)<br>with 100 Hz modulating tone |
| **Pin Assignments:** | Tip = Hot<br>Ring = Hot<br>Sleeve = Gnd | Tip = Hot<br>Ring = no signal<br>Sleeve = Gnd | 1 = Ground<br>2 = Audio +<br>3 = Audio – |
| **Phantom Power Protection:** | No | Yes | Yes |

### Computer/Network Interface

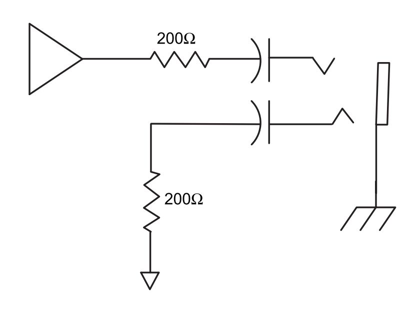
| **Ethernet** | **USB*** |
|---|---|
| RJ45 | USB Series B Receptacle |

* USB-IF logo is a trademark of Universal Serial Bus Implementers Forum, Inc.

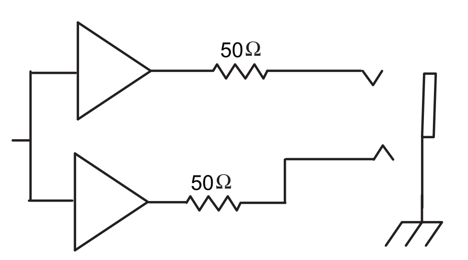
**XLR**




**1/4" Phone**




**1/4" Monitor/headphone**



## Replacement Parts and Accessories

### Furnished Accessories

| Microphone Stand Adapter (UR2) | WA371 |
|---|---|
| Threaded locking Adapter (with TA4F), UR1 | WA340 |
| Zipper Bag (UR1) | 26A13 |
| Zipper Bag (UR2) | 26A14 |
| Antenna Extension Cables (2) | 95B9023 |
| RF Distribution Cables (2) | 95N2035 |
| Antenna (UR1) 518-578 MHz | UA710 |
| Antenna (UR1) 578-698 MHz | UA720 |
| Antenna (UR1) 740-865 MHz | UA730 |
| Antenna (UR1) 944-952 MHz | UA740 |
| Two Antennas (UR4+), Band Dependent (see table) | UA820 |
| Transmitter Carrying Case | 95C9053 |

### Optional Accessories

| SM58 Head with Grille | RPW112 |
|---|---|
| SM86 Head with Grille | RPW114 |
| BETA 58 Head with Grille | RPW118 |
| BETA 87A Head with Grille | RPW120 |
| BETA 87C Head with Grille | RPW122 |
| SM87A Head with Grille | RPW116 |
| KSM9/SL Head with Grille | RPW180 |
| KSM9/BK Head with Grille | RPW184 |
| Matte Silver Grille (SM58) | RK143G |
| Matte Silver Grille (SM86) | RPM266 |
| Matte Silver Grille (BETA 58) | RK265G |
| Black Grille (SM87) | RK214G |
| Matte Silver Grille (BETA 87A) | RK312 |
| Matte Silver Grille (BETA 87C) | RK312 |
| Black Grille (BETA 58) | RK323G |
| Black Grille (BETA 87A/BETA 87C) | RK324G |
| Champagne Grille (KSM9/SL) | RPM260 |
| Black Grille (KSM9/BK) | RPM264 |
| Popper Stopper‘ Windscreen | A85WS |
| Belt Clip (UR1) | 44A8031 |
| Bodypack Pouch (Black), UR1 | WA580B |
| Bodypack Pouch (White), UR1 | WA580W |

## Antenna Combiners and Accessories

- Antennas and receivers must be from the same frequency band.
- The supplied 1/2 wave antennas can be remotely mounted or mounted directly to the UA845.
- Antennas and cables for use with the UA845 can also be used with stand-alone UHF-R receivers.

| Passive Antenna/Splitter Combiner Kit (recommended for 2 receivers) | UA221 |
|---|---|
| UHF Antenna Power Distribution Amplifier | UA845- |
| U.S.A. (470-952 MHz) | UA845SWB |
| Europe | UA845E |
| UK | UA845UK |
| 1/2 Wave, Omnidirectional, Wideband Antenna (470-952 MHz) | UA860SWB |
| Active Directional Wideband Antenna (470-698 MHz) | UA870USTV |
| Active Directional Narrowband Antenna (944-952 MHz) | UA870X |
| Wideband In-Line RF Amplifier (470-698 MHz) | UA830USTV |
| Narrowband In-Line RF Amplifier (944-952 MHz) | UA830X |
| Passive Unidirectional Wideband Antenna (470-952 MHz) | PA805SWB |
| Passive Unidirectional Narrow band Antenna (944-952 MHz) | PA805X |

| 1/2 wave antennas (2) | |
|---|---|
| G1 Band | UA820G |
| H4E, H4 Bands | UA820H4 |
| J5E, J5 Bands | UA820J |
| L3E, L3 Bands | UA820L3 |
| Q5, Q6, Q10A Bands | UA820Q |
| R9, ABJ Bands | UA820A |
| X1 Band | UA820X |
| 10’ Antenna Cable | PA725 |
| 25’ Antenna Cable (RG-8/X) | UA825 |
| 50’ Antenna Cable (RG-8/X) | UA850 |
| 100’ Antenna Cable | UA8100 |

## Architects' and Engineers' Specifications

The wireless system shall operate in the UHF band between 470-865 MHz and 944-952 MHz, with the specific range being dependent on the user's locale. The system shall include the option of changing the operating frequency in order to avoid RF interference, enabling up to 160 systems to operate simultaneously in the same location. Preconfigured group, channel and frequency setups shall be available to ensure that multiple systems in use do not interfere with one another.

All transmitters shall be powered by 2 AA batteries and shall have a power on/off switch. The bodypack will have an LED indicating that power is on. Available transmitters shall include: a body pack for use with electric guitars, basses, and other electric instruments, and a handheld microphone for vocals. The transmitters shall have a DC/DC converter to ensure consistent performance, even if battery voltages change.

The receiver shall have a user-programmable, menu-driven LCD showing group, channel, frequency, name, squelch level, and locked/unlocked status. The system shall use technology such as MARCAD, signal combining circuitry to improve reception, minimize signal dropouts, and achieve the best possible signal-to-noise ratio. An equalizer, tone key squelch, and noise squelch circuitry shall be built into the system to provide optimal sound quality and minimize unwanted noise. The receiver shall include dual RF meters (one for each antenna), an audio level meter, and a Networking Interface connector for computer control and monitoring. The receiver shall have a volume control and an adjustable noise squelch control.

The system shall be the Shure UHF-R Wireless.

# CERTIFICATION

### UR1, UR2, UR4S+, UR4D+

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Meets requirements of EMC standards EN 300 422 Parts 1 and 2 and EN 301 489 Parts 1 and 9.

Meets essential requirements of European R&TTE Directive 99/5/EC, eligible to bear the CE mark.

### UR1, UR2

Certified under FCC Part 74. (**FCC ID:** DD4UR1, DD4UR2). Certified by IC in Canada under RSS-123 and RSS-102. (**IC:** 616A-UR1, 616A-UR2).

616A-UR1G, 616A-UR2G

Emission Designator: 120KF3E

### UR4S+, UR4D+

Approved under the Declaration of Conformity (DoC) provision of FCC Part 15. Certified in Canada by IC to RSS-123. (**IC:** 616A-UR4P).

Conforms to Australian EMC requirements and is eligible for C-Tick marking.

Have been granted the following Country Safety Approvals:

cULus Mark for US and Canada: Meets UL6500 and CSA/CAN E60065. UL GS-Certified to EN60065.

Operation of this device is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

The CE Declaration of Conformity can be obtained from Shure Incorporated or any of its European representatives. For contact information please visit www.shure.com

The CE Declaration of Conformity can be obtained from: www.shure.com/europe/compliance

Authorized European representative:
Shure Europe GmbH
Headquarters Europe, Middle East & Africa
Department: EMEA Approval
Wannenacker Str. 28
D-74078 Heilbronn, Germany
Phone: +49 7131 72 14 0
Fax: +49 7131 72 14 14
Email: EMEAsupport@shure.de

## LICENSING INFORMATION

Licensing: A ministerial license to operate this equipment may be required in certain areas. Consult your national authority for possible requirements. Changes or modifications not expressly approved by Shure Incorporated could void your authority to operate the equipment. Licensing of Shure wireless microphone equipment is the user's responsibility, and licensability depends on the user's classification and application, and on the selected frequency. Shure strongly urges the user to contact the appropriate telecommunications authority concerning proper licensing, and before choosing and ordering frequencies.

## INFORMATION TO USER

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer.

**Note:** EMC conformance testing is based on the use of supplied and recommended cable types. The use of other cable types may degrade EMC performance.

**Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.**







## 目录

## 功能概述

UHF-R® 无线麦克风系统使用最新的无线技术，具有非常出色的音频清晰度，结构坚固，性能可靠。 在需要多个无线麦克风系统的专业安装场合，能够方便地设置和使用麦克风的高级功能。

## 频段选择

Shure 可以提供符合不同国家或地区政府法规的多波段选择无线系统。 这些法规有助于限制无线电射频 (RF) 在不同无线设备之间的干扰，并且可以防止干扰当地的电视和紧急广播等公共通信频道。

接收机和发射机表面标注了系统的波段和频率范围。 例如，“H4 518–578 MHz”。

有关您所在地区可以使用的波段，请向当地经销商咨询，或致电 Shure 查询。 还可以通过访问 Shure 网站 (www.shure.com) 来查阅详细信息。

## 组和频道

要通过无线系统发射音频信号，必须将发射机和接收机设置为相同的无线电频率或频道。 因为每个麦克风必须使用一个不同的频道，因此更大的频道选择范围能够让用户同时使用更多的麦克风。 它还提供了更广泛的空闲可用频道选择 — 这些频道不会与电视广播、电子设备或其它无线系统发生干扰。

组是一系列相容频道的组合。 将频道设置在相同组中，无线麦克风可以获得更好的工作效果。

## 自动频率选择

以下功能可以扫描无线电频率环境，为特定安装找到最佳的组和频道设置。

- **组扫描 — 可以找到具有最多可用频道的组，然后将所有连网的接收机设置为该组中的频道。**
- **频道扫描 — 可以找到当前选择组中的第一个可用频道，并将接收机设置到该频道。**

有关使用这些功能的说明，请按照第 27 页中的步骤执行。

## 自动发射机同步

此功能可以自动将组和频道的设置从接收机传送到发射机。 还可以对接收机上的设置进行编程，然后传送这些设置。请参见第 31 页。

## 界面锁定

此功能可以将发射机和接收机锁定，从而让用户无法更改设置。 还可以禁用发射机电源开关，这样即使在表演过程中意外按下了电源开关，发射机仍可保持打开状态。

## 音频增益结构

以下设置可以让用户调节整个系统的音频增益：

- **灵敏度（仅用于腰包）。** 腰包发射机输入中的 25 dB 范围的增益调节。
- **发射机增益。** 可在发射机中实现 30dB 范围的音频增益调节（如Audio 指示灯所示影响接收机的音频电平）。
- **输出电平。** 可以在接收机输出中实现 32 dB 的衰减，和一个静音设置。
- **麦克风/ 线路开关。** 用于在接收机 XLR 输出中匹配音频电平的 –30 dB 衰减器。

## 连网

每个发射机在背部都有一个 RJ-45 端口，用于通过以太网连接到其它接收机。 连网的接收机能够让用户使用一个组扫描命令来为所有接收机自动设置频道。 还可以通过 Shure Wireless Workbench PC （无线工作台）PC 软件控制和监视所有连网的接收机。

## 射频分配端口

可以使用射频分配端口，让使用相同频段的最多十部接收机共用来自同一对天线的信号。射频分配端口无需使用天线分线器或天线分配放大器。有源电路可以在保持信号质量的前提下，将插入损失降低到最小。输入滤波功能可以让信号免受频带外干扰的影响。只有在额外的接收机连接到射频分配端口时，分配电路才使用有源工作方式。在不使用额外端口时，将旁通此端口电路，让接收机作为独立部件工作。

## Shure 无线工作台软件

附送光盘中的 Shure 无线工作台软件包括了用于安装和管理多个无线系统的各种有用工具。 只需在计算机上安装软件，并将其连接到接收机网络，就可以通过网络监控接收机和发射机。（有关连网的详细信息，请参见第 28 页。）

安装软件后，可以在联机帮助文件中找到使用“无线工作台”软件的说明。

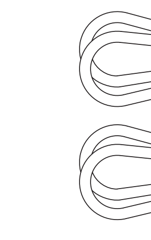
# 系统组件

## 所有系统都包括：

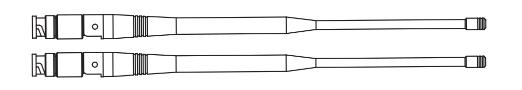


UR4S+ 或 UR4D+ 接收机
（图中为 UR4D+）

两根天线缆线

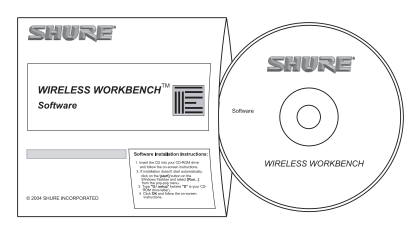


两条射频分配电线



两个 1/2 波长天线

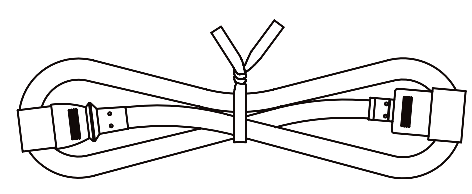
IEC 电缆



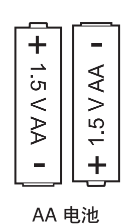

Shure 无线工作台软件



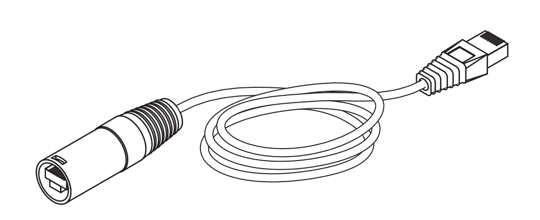
2 个天线孔插塞
4 个带垫片的机架安装螺丝



IEC 延长电缆




AA 电池



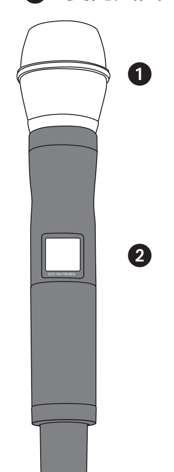
带有高强度插头的以太网缆线

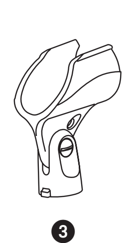



发射机便携箱

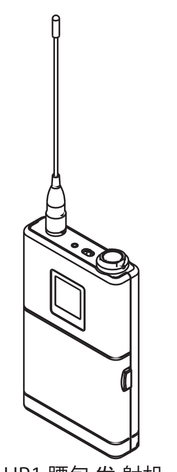
## 手持系统包括：

1. 麦克风头（SM58®、SM86、Beta 58A®、Beta 87A™ Beta 87C™ 或 KSM9/BK, KSM9/SL）
2. UR2 手持发射机
3. 麦克风夹

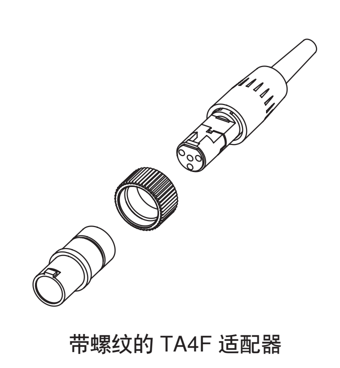



## 腰包系统包括：

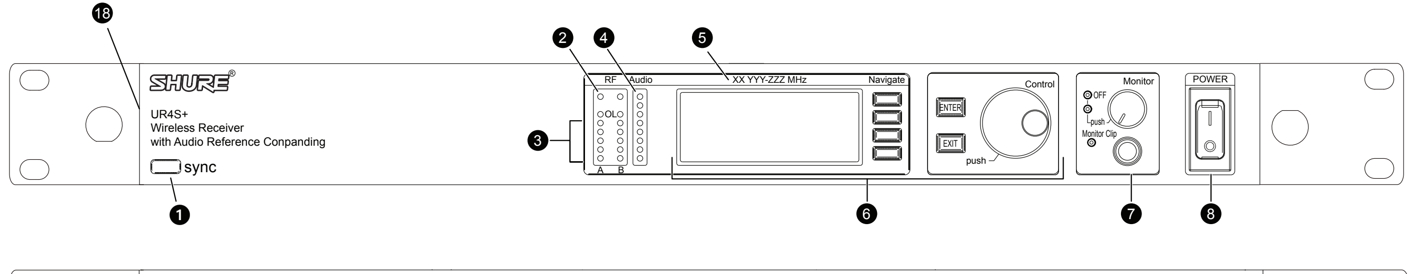


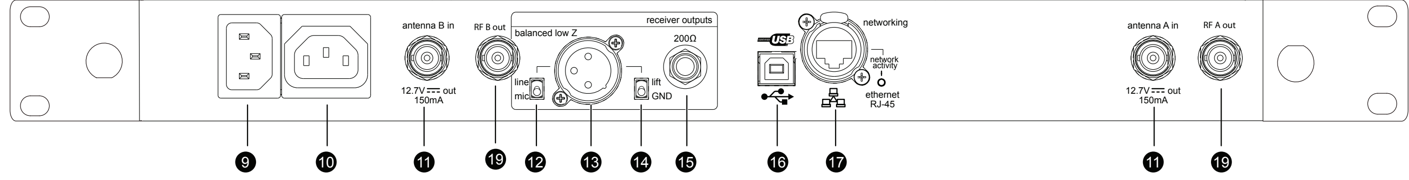
UR1 腰包 发 射机



带螺纹的 TA4F 适配器

## 接收机控制器和接头




❶ **SYNC （**同步）红外 (IR) 端口。 将组、频道和其它设置传送 到发射机。请参见第 31 页。

❷ 静噪指示灯。

- 蓝色（亮） = 检测到发射机信号
- 灭= 由于接收效果不佳或无按钮音，而无信号或无静噪信号。

注释： 只有在至少一个蓝色指示灯亮的情况下，接收 机才输出音频信号。

❸ **RF** （射频）指示灯。 指示每种天线和分集条件下的射频信号 强度。

- 黄色= 正常
- 红色= 过强（大于 –25 dBm）

❹ **Audio** （视频）指示灯。 用于显示发射机的音频信号强度。

- 绿色= 有信号
- 黄色= 正常峰值
- 红色= 过强

要纠正此电平，可以调节发射机增益。

❺ 显示接收机频段的名称和范围。

❻ 液晶显示屏界面。 提供了一种可以从前面板对接收机进行编程 的简便方法（请参见下一页中的详细信息）。

❼ **Monitor。** 用于耳机的 1/4 英寸输出插孔和音量旋钮。

- **MONITOR CLIP LED** 表明输出到耳机的监听信号出现削波。
- 双模式： 按下旋钮从接收机一切换到接收机二。

❽ **Power 开关。** 打开和关闭设备电源。

❾ 交流电源输入，IEC 接头。 100–240 伏交流。

❿ **交流电源输出（无开关控制）。 使用 IEC 延长线，最多可以将五台 UR4+ 接收器连接到同一个交流电源。**

⓫ 分集式天线输入 A 和 B

注释： 天线输入为直流偏置。 仅允许使用第 35 页中列 出的天线合成器和附件。 一些类型的天线分配器或其他 产品可能会造成直流电源短路并损坏接收机。

⓬ **Mic**/**Line** 开关。 更改输出电平 30 dB （仅 XLR 输出）

⓭ 电子平衡 XLR 输出插孔

⓮ **Lift**/**GND** 开关。 可以从 XLR 接头的针脚 1 断开接地（默认 值 = GND。

⓯ 平衡阻抗的 1/4 英寸输出插孔 (200Ω)

⓰ 用于计算机界面的 USB 插孔。

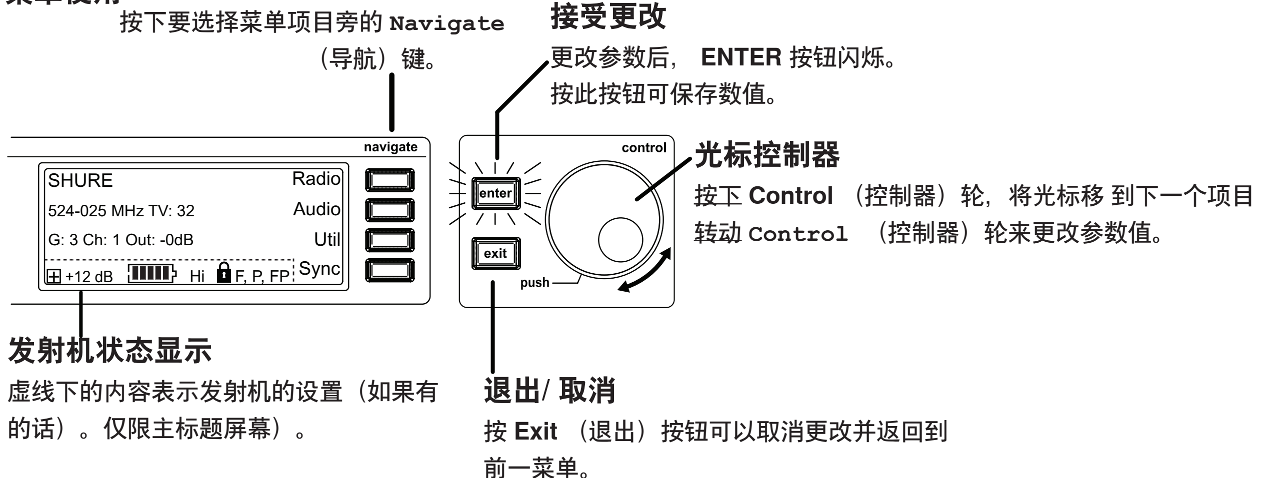
⓱ 用于以太网界面的 RJ-45 插孔。 可插入正常的和“加固的” RJ-45 插头。

⓲ 温控风扇能够保证在高温环境下实现最佳性能。 应根据需要清 洁风扇滤网。

⓳ 射频分配端口可将射频信号从一部接收机传递到下一部接收机，最多可以让 10 部接收机共用一对天线。

# 接收机液晶显示屏界面

## 菜单使用




## 接收机参数

使用以下说明来通过液晶屏幕设置参数。

注释： 在调整参数后，必须按下闪烁的 **ENTER** 按钮以接受更改。

### 组和频道

菜单: Radio

- 按下 Control 轮，将光标移动到组（G）或频道（Ch）参数。
- 转动 Control轮来更改参数。

### Frequency （频率)

菜单:Radio

- 按下 Control 轮，将光标移动到整数值（524.025 MHz）或小数值 (524.025）。
- 转动 Control 轮来更改值。

### 自动发射机同步

菜单:Sync

- 请参见第 65 页。

### Receiver Name

菜单:Util

- 转动 Control 轮来更改字母。
- 按下 Control 轮来移动到下一个字母。

### 输出电平

菜单:Audio

此设置可以调整 XLR 和 1/4 英寸音频输出插孔的信号电平。

- 转动 Control 轮，以 dB 为单位更改相对电平。 (0 dB 到 –32 dB)。
- 将滚轮向下旋转，直到将输出静音。

### 静噪

菜单:Radio > Squelch

- 转动 Control 轮来更改参数

### 接收机锁定

位于锁定状态时，无法从前面板更改接收机状态。 但是，仍可以滚动液晶显示屏菜单来查看设置（并关闭锁定）。

菜单：Util > 工具） > Lock （锁定）

- 转动 Control 轮，将锁定切换为打开或关闭（ON 或 OFF）。

### 液晶屏视图

菜单：Util （工具） >Title （标题）

- 转动 Control 轮来标记一个要显示的项目。
- 按下 Control 轮来移动到下一个项目。

### 液晶屏对比度

菜单: Util 工具） >Contrast （对比度）

- 转动 Control 轮来提高或降低对比度。

### 音频键控

菜单：Radio （无线电） >Squelch （静噪）> Tonekey （音频键控）

音频键控静噪在接收机检测到发射机之前可以将输出静音。 除非要进行特定故障排除操作，否则音频键控应始终保持为打开（On）。

## 网络参数

**注释：**

- 在按 **ENTER** 接受了更改的网络参数后，接收机将重新启动
- 在双模式 (UR4D+) 下，这些设置将影响两台接收机（两台接收 机可以作为一个网络设备）。

**将接收机设置为网络模式**

菜单: Util （工具）> Network （网络）

1. 按下 **Control** 轮，将光标移动到 Mode （模式）参数。
2. 转动 **Control** 轮，将接收机设置为以下一个值：

- DHCP: 将接收机连接到 DHCP 服务器时，使用该设置。
- Manual（手动）：可以让用户将接收机设置为使用特定的 IP 地址、

## IP 地址、

- 菜单:Util （工具）> Network （网络）

**注释：** 要更改这些设置，必须将网络模式设置为 Manual （手动）。

1. 按下 **Control** 轮，将光标移动到以下任意一个参数：

- IP （IP 地址）
- Sub （子网掩码）

2. 转动 **Control** 轮来更改值。

## 设备标识

通过“无线工作台软件”帮助识别接收机（不会影响网络标 识）。

菜单: Util （工具）> Network （网络）

1. 按下 **Control** 轮，将光标移动到 DevID （设备标识）参 数。
2. 转动 **Control** 轮，将接收机设置为更改该值：

## 定制组

此功能可以让用户建立自己的频率组。

**创建新组...**

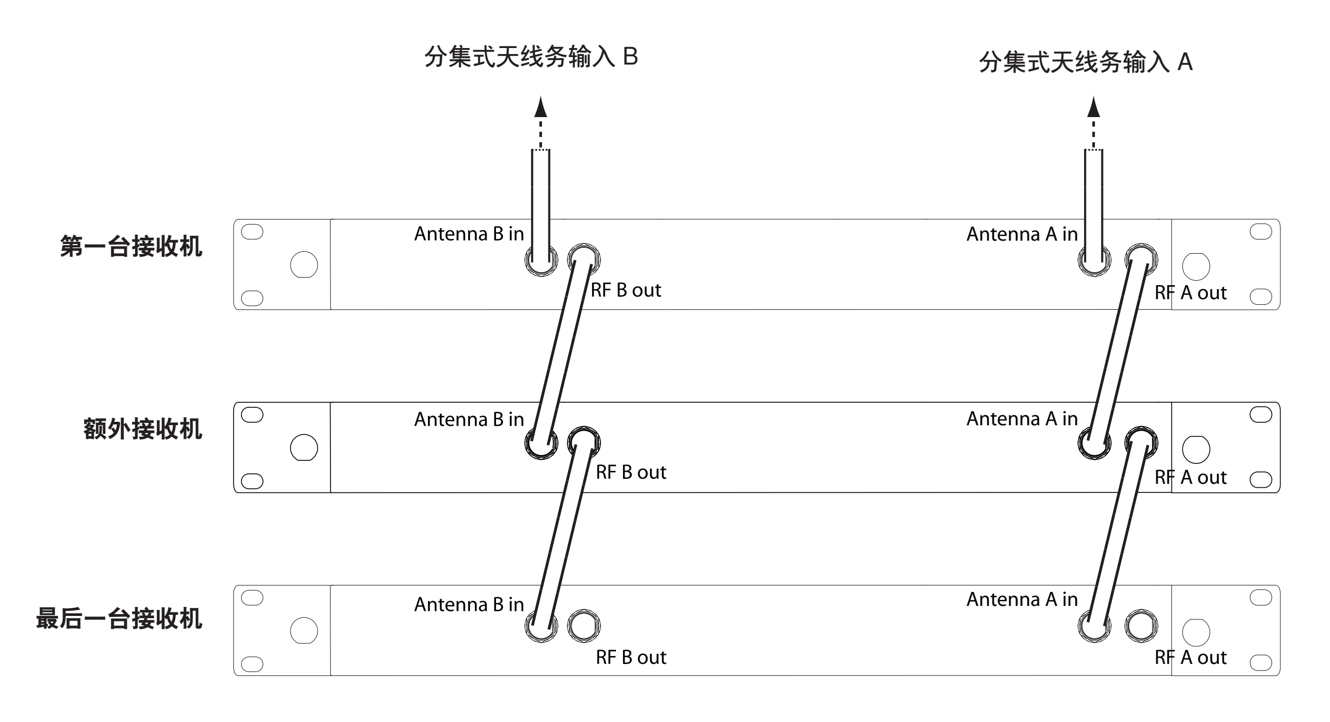
菜单: Radio （无线电）> Custom （定制）

1. 转动 **Control** 轮来选择定制组 (U1, U2, U3, 等.)
2. 按下: **Control** 轮来移动到 Channel 参数，并转动以选 择一个频道 (01, 02, 03, 等.)
3. 按下 **Control** 轮来移动到 Freq （频率）参数，并为该频道选择频率。
4. 按 NEXT （下一个）菜单键，以为该组中的下一个频道选 择频率。

## 将多个接收机连接到射频分配端口

射频分配端口可将射频信号从一部接收机传递到下一部接收机， 最多可以让 10 部接收机共用一对天线。如图所示，使用提供的射频分配线缆连接每个接收机的端口。

注意：所有接收机必须工作在相同频段。



## 自动频率选择

执行这些步骤，以使用频道扫描和组扫描功能。

**开始之前...**

- 将接收机安装在将要使用的地点，并通电。
- 将连接到接收机的所有混音设备静音。
- 为要设置的系统关闭所有腰包或手持发射机。
- 打开潜在的干扰源，如其它无线系统或设备、计算机、CD 播放机、效果处理器和数字处理设备，让其处于与演示和表演时同样的状态。

**单接收机**

1. 选择 Radio （无线电） > Scan （扫描） > Chan Scan （频道扫描）（使用接收机液晶屏上的) **Navigate** （导航）键。
2. 转动 **Control** 轮来选择组。
3. 按 Chan Scan. （频道扫描）。 显示屏指示接收机正在搜索。 搜索完成后，它将显示出选择的频道。
4. 按下闪烁的 **ENTER** 按钮来接受推荐的频道。
5. 同步接收机（参见第 31 页）。

**连网的或配对的接收机**

使用连网或配对接收机时，可以利用组扫描功能的优势同时为所有接收机设定组和频道设置。( 有关连网的说明，请参见第 28 页。)

**从任意接收机执行组扫描...**

1. 选择 Radio （无线电） > Scan （扫描） > Group Scan （组扫描）（使用接收机液晶屏上的 **Navigate** （导航）键。显示屏指示接收机正在搜索 (Scan In Progress [ 正在扫描]) ). 完成后，将显示带有最多可用频道的组。
2. 如有必要，可以旋转 **Control** 轮来更改组。 将显示每个组的打开频道数。
3. 按下闪烁的 **ENTER** 按钮来将所有接收机设置为该组中的可用频道。

**注释： 组扫描功能仅能用于相同频段中的接收机。**

## 多个接收机 — 未连网

如果接收机没有连网（或在不同的波段），组扫描无法自动设定其组和频道设置值。 但是，用户仍可以使用组扫描功能找到具有大多数空闲频道的组，并利用频道扫描功能找到该组中的可用频道。

**找到带有大多数可用频道的组...**

使用上述用于连网接收机的步骤来执行组扫描。 但是，应记下选定的组，然后再按下闪烁的 **ENTER** 按钮来接受该组。

**将接收机设置为在该组中打开频道...**

使用上述用于单个接收机的步骤来对其余的接收机执行频道扫描。 确保在执行频道扫面之前，已为每个接收机选择了相同的组。

重要提示： 为第一台接收机设置频道后, 应立即使该接收机与发射机同步, 并让其保持打开, 以便让下一台接收机在进行频道扫描过程中能够检测到该频道。 否则，所有接收机都将设置到同一个可用的频道。

**注释：** 不同波段（H4、J5、L3 等）中的接收机不需要设置为相同的组。

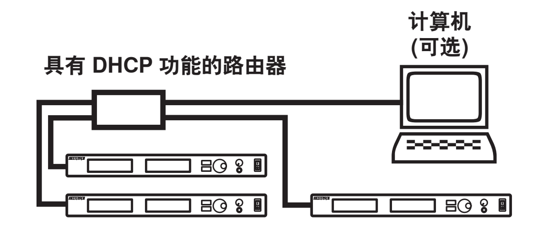
# 接收机连网

### 基本网络

使用 DHCP 服务将接收机连接到以太网路由器。 使用以太网交换机在规模较大的 安装情况下扩展网络范围。

可使用接收机的默认网络设置。

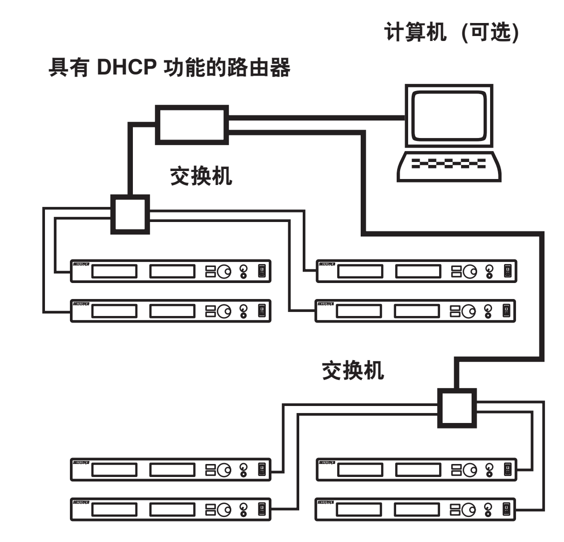
(Util （工具）> Network > （网络） Mode = DHCP).




## 使用计算机访问网络

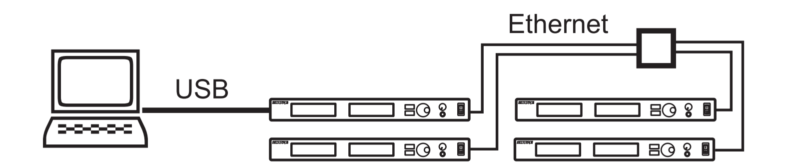
如果用户想要使用“无线工作台”软件，将计算机连接到网络，并安装接收机附带的软件。 确保将计算机配置为 DHCP （从控制面板，单击网络连接。 双击局 域网连接。 选择 Internet 协议 TCP/IP) 并单击属性。 选择自动获得 IP 地址和自动获得 DNS 服务器地址，然后单击“确定”）。

> **注释：** 计算机上的某些安全性软件或防火墙设置可能会妨碍连接到接收机。 如 果使用防火墙软件，应允许在端口 2201 上进行连接。




### 使用 USB...

将计算机连接到任何接收机上的 USB 端口即可访问整个网络。



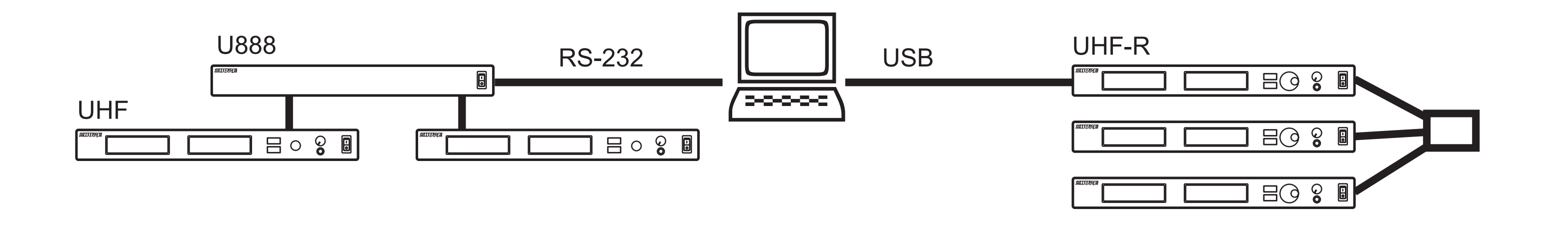

## 静态 IP 地址

接收机还支持静态 IP 地址。 指定您自己的 IP 地址 ( Util （工具） > Network （网络） > Mode = Manual). “网络参数” 第 26 页。

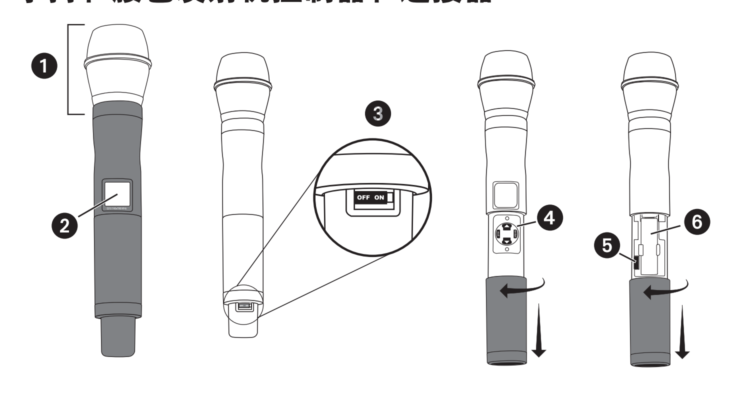
**注释：** 可以通过其中一个液晶屏界面将双接收机设置为使用同一个 IP 地址。

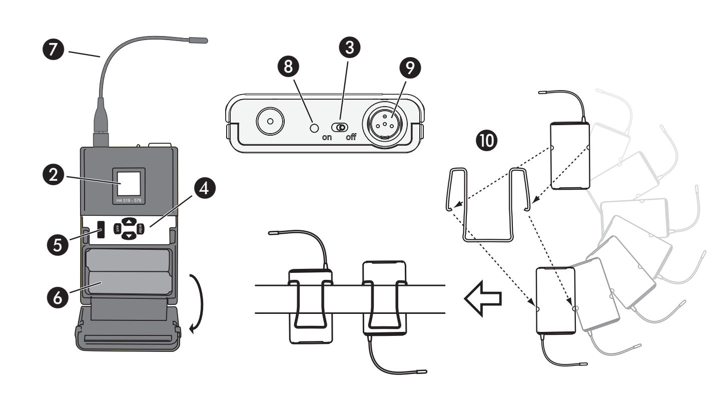
## 现有的 UHF 网络安装

Shure 的 UHF-R 接收机和旧式的 UHF 接收机都可以连网到同一台 PC，并可用最新的“无线工作台”软件对其进行访问。



## 手持和腰包发射机控制器和连接器




❶ 可互换麦克风头（图中所示为 BETA 87A）。
❷ 液晶显示器面板。
❸ 电源开关。
❹ 液晶屏界面控制按钮。
❺ 红外（IR）端口请参见第 31 页。
❻ 电池仓。
❼ 柔性天线。
❽ 电源发光二极管指示灯。
❾ 4 针脚麦克风输入插孔。
❿ 可逆皮带夹。

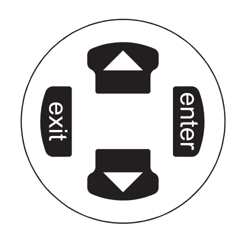
## 发射机液晶屏界面。

SHURE INC.
G: 34 Ch: 21
524.025MHz
Gain +20dB

**主菜单**

上箭头键。
向上滚动或增大值。

**exit** （退出）键。 移动到左侧，或退出而不保存更改。




**enter** 键。 按下来选择参数并接受选取值。

下箭头键。
向下滚动或减小值。

## 发射机电池

接收机使用标准 AA 电池工作。 应在更换电池前关闭发射机。

如图所示，发射机液晶屏上显示的电池电量表显示了电池的剩余电量。

| **发射机显示屏** | **剩余的大约 小时数 (碱性电池)** | |
|---|---|---|
| | 一般功率 | 高功率* |
| | 7.5 至 9.5 | 5 至 6 |
| | 5.75 至 7.5 | 4 至 5 |
| | 4 至 5.75 | 3 至 4 |
| | 2 至 4 | 1.5 至 3 |
| | 15 分钟至 2 小时 | 10 分钟至 1.5 小时 |

* 在一些禁止使用高功率的国家销售的型号没有高功率设置。

## 发射机参数

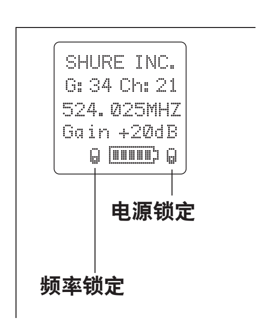
按下主菜单中的 **ENTER** 来调整以下参数：

```
G: 34 Ch: 21
524.025MHZ
Gain +20dB
SHURE INC.
```

**组** (G)和频道 **Channel** (Ch). 必须与接收机的设置匹配。
**频率** (MHz). 以 0.025 兆赫为增量的手动频率选择。
**增益** (Gain). 在 –10 dB 到 +20 dB 的范围内调节音频电平。
**灵敏度** (Sens) （仅用于腰包）。
将音频输入设置为 +15 dB, 0 dB, 或 –10 dB。
**名称显示。** 12 位 ASCII 码。

使用以下键组合来访问附加功能和参数：

### 锁定指示符




按住 ▼ + 分接 ▲

### 液晶显示器面板

更改液晶显示器 面板

按住 exit + 分接 ▲

### 频率锁定

切换设置。 启用时，不能更改频率，发射机同步不会覆盖频率设置。

按住 exit + 分接 enter

### 电源锁定

切换电源锁定。 如果锁定，电源开关将关闭发射机。

按住 exit + 分接 ▼

### 射频功率电平设置*



使用箭头键来选择正常(10 毫瓦）或高功率（50/100 毫瓦**）。 使用正常功率设置可节省电池电量，也可防止接收机射频信号过强。

* 在一些禁止使用高功率的国家销售的型号没有高功率设置。
** 高功率值根据型号的不同而有所差别。

## 发射机增益设置

调节发射机增益和输入灵敏度，以使接收机上的 **Audio** （音频）发光二极管的峰值在使用过程中位于橙黄色范围内。 在腰包发射机上，可以更改灵敏度设置，以便将不同乐器或麦克风连接到输入时补偿不同的音频电平。

要调节增益，应打开发射机并按 **enter** 按钮。 向下滚动到 Gain （增益）参数或 Sens（灵敏度）参数（仅腰包），并再次按 **enter** 使用箭头键调节设置值，并按 **enter** 保存设置（或按 **Exit** [ 退出] 取消而不保存）。

## 射频安全模式

这一特殊功能会将射频广播临时静音。 这允许用户更改发射机上的频率设置，而不会意外“切入”另一个发射机使用的频道。

1. 关闭发射机。
2. 打开发射机电源时，按住 **exit** （退出）键（对于手持麦克风，需要拉下电池盖关闭把手）。 设备处于射频安全模式下时，液晶屏闪烁。
3. 如正常操作一样更改组和频道设置 — 发射机将停止广播。
4. 关闭发射机电源，然后再打开退出射频安全模式。

## 自动发射机同步

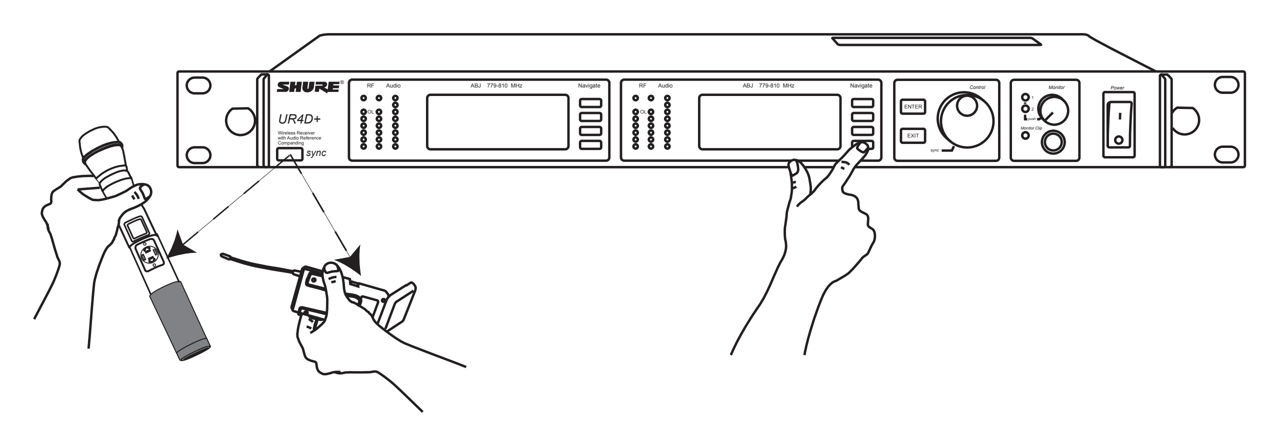
此功能将腰包或手持发射机设置自动更新为与选定的发射机同步。

### 要执行发射机同步...

1. 打开发射机电池盖，露出红外（IR）端口。
2. 将红外端口朝向接收机，然后从接收机液晶屏界面选择 Sync （同步） > sync （发送）。

接收机上的显示屏将显示是否同步成功。 如果同步失败，请再次尝试操作，并确保已将发射机上的红外端口暴露在外，并直接对准接收机的红外端口。

**注释：** 在另一台接收机上执行同步之前，应关闭电池仓门。




### 要传送其它发射机设置...

还可以选择在执行同步时从接收机传送其它发射机设置。 使用以下步骤：

1. 从接收机液晶屏界面选择 Sync （同步） > Setup （设置）。
2. 转动 **Control** 轮来更改参数设置。
3. 按下 **Control** 轮来移动到下一个参数。
4. 按下闪烁的 **ENTER** 按钮来保存设置。

   在接收机上设置的发射机设置可以保留用于今后同步时使用。

   **注释：**如果不需要同步功能发送设置值，应将参数设置为 No Change （无更改）

**可用设置...**

可以从 Sync （同步） > Setup （设置）菜单使用以下设置：

### 灵敏度 (Sens) 腰包发射机

- 增益 (Gain)
- 射频功率 (Pwr )
- 电源和频率锁定 (Lock ), 它具有以下值：
  - 仅电源锁定： (Pwr Only)
  - 仅频率锁定： (Pwr Only)
  - 两者： (Freq and Pwr [频率和电源])
  - 均不锁定： (Unlocked [ 不锁定])
- 定制组： (CG):
  - 打开（ON）： 在同步过程中将定制组发送到发射机
  - 关闭（OFF）： 不发送定制组（减少同步时间）

## 故障排除

| 问题 | 参见解决方案... |
| --- | --- |
| **无声音** | **电源、缆线或射频** |
| **声音微弱或失真** | 增益 |
| **工作距离过短，突发噪音或信号跌落** | 射频 |
| **无法关闭发射机或更改频率设置，或者无法为接收机 编程** | 界面锁定 |
| **交流声或蜂鸣音过大** | 接地断开 |

### 电源

确保发射机和接收机接使用了足够的电压。 接收机需要至少 90 伏直流电压。 检查接收机的电池指示灯，如有必要应更换电池。

### 增益

调节发射机增益和灵敏度设置（参见第 30 页）或接收机输出电平（第 25 页），或切换接收机背面的 **mic/line** （麦克风 / 线路）开关。

### 缆线

检查所有缆线和接头是否工作正常。

### 接地断开

断开接收机 XLR 输出针脚 1 上的接地可能有时会去除音频信号中的交流声或蜂鸣音。 如果使用 XLR 接头，应将接收机上的 **GND/LIFT** （接地转换）开关切换为 **LIFT** （接地断开）。

### 界面锁定

可以锁定发射机和接收机以防止意外更改。在发射机的液晶屏上找到锁定符号，并使用第 30 页中所示的按键组合将其关 闭。要关闭接收机的界面锁定，请参见第 25 页。

### 增大范围

如果发射机距离接收机天线超过 6 到 60 米（20 到 200 英 尺），您可以通过以下方法增大范围：

- 降低干扰（参见以下内容）
- 增大发射机射频功率电平（参见第 30 页）。
- 使用有源定向天线、天线分配系统或其它天线附件以增大射频范围（参见第 35 页）。

### 无线电射频 (RF)

**使用射频发光二极管**

如果蓝色的 **RF** （射频）发光二极管都没有点亮，表示接收机 没有检测到发射机的存在。黄色的 **RF** （射频）发光二极管表示接收到的信号强度。 信号 可能是从接收机接收到的 也可能是从诸如电视广播等干扰源 接收到的。 关闭发射机。 如果有多个黄色的 RF （射频）发光 二极管仍点亮，则表示该频道具有太多干扰，应尝试使用不同 频道。

红色的 **RF** （射频）发光二极管表示射频信号过强。 通常情况下不会引起问题，但如果同时使用多个系统，就可能导致系统之间产生干扰。

**消除射频过强**

如果看到接收机上的红色 **RF** （射频）发光二极管点亮，应降低发射机射频功率电平（参见第 30 页）或移动发射机原理接收机 — 距离至少为 6 米（20 英尺）。 如果使用有源天线，应降低天线或放大器增益。

**功能**

- 执行发射机同步，或确保发射机或接收机设置到相同的组和频 道
- 查看发射机和接收机上的标签，以确保它们使用相同的波段（H4、J5、L3 等...）。

**降低干扰**

- 使用不同频道或执行自动组或频道扫描（参见第 27 页）。
- 对于多个系统，应检查是否所有的系统都设置为同一组中的频 道（不同波段中的系统需要设置为相同组）。
- 发射机和接收机天线之间应在无障碍的情况下保持直线相对 位置
- 让接收机天线远离金属物品或其它射频干扰源（诸如 CD 播放 器、计算机、数字效果器、网络交换机、网线和个人立体声监控器 (PSM) 等无线系系统）。
- 消除射频信号过强（参见以下内容）。

# 规格

## 频率范围和发射机输出功率

| 频段 | 范围 | 发射机功率 (标称 mW) | |
|---|---|---|---|
| | | 手持式 | 腰包 |
| **G1** | 470-530 兆赫 | 10 / 50 | 10 / 100 |
| **G1E** | 470-530 兆赫 | 10 / 50 | 10 / 100 |
| G7C | 470.125–509.875 MHz | 10 / 50 | 10 / 50 |
| **H4** | 518-578 兆赫 | 10 / 50 | 10 / 100 |
| **H4E** | 518-578 兆赫 | 10 / 50 | 10 / 50 |
| **J5** | 578-608, 614-638 兆赫 | 10 / 50 | 10 / 100 |
| **J5E** | 578-638 兆赫 | 10 / 50 | 10 / 50 |
| **L3** | 638-698 兆赫 | 10 / 50 | 10 / 100 |
| **L3E** | 638-698 兆赫 | 10 / 50 | 10 / 50 |
| M5E | 694-758 MHz | 10 / 50 | 10 / 50 |
| P8 | 710–790 MHz | 10 / 50 | 10 / 50 |
| P9 | 710–787 MHz | 10 / 50 | 10 / 50 |
| **Q5** | 740-814 兆赫 | 10 / 50 | 10 / 50 |
| **R9** | 790-865 兆赫 | 10 / 50 | 10 / 50 |
| **Q6** | 740-752 兆赫 | 10 | 10 |
| **A24** | 779-788 / 797-806 兆赫 | 10 | 10 |
| **JBX** | 806-810 兆赫 | 10 | 10 |
| **Q10A** | 740-787 兆赫 | 10 / 50 | 10 / 50 |
| **R16** | 794-806 兆赫 | 10 / 50 | 10 / 50 |
| **R18** | 794-806 兆赫 | 10仅 | 10仅 |
| **X1** | 944-952 | 10 / 50 | 10 / 100 |

**注释**

本无线电设备为专业音乐演出及其他类似场合而设计。

本无线电设备可能具有使用您所在地区未经授权的频率的能力。 请与您所在国的相关机构联系，以获得有关您所在地区无线麦克风授权使用频率的信息。

**射频载波频率范围**

518-865 兆赫，根据地区而定

**工作范围**

**UR1, UR2:**

在一般情况下为 152.4 米（500 英尺）

500 米(1600 英尺) 无障碍直线相对距离，户外型，单系统

**注释：** 实际工作范围与射频信号的吸收、反射和干扰有关

**音频频率响应**

40-18,000 Hz, (+1 dB, -3 dB)。

**注释：** 整个系统的频率响应取决于麦克风元件

**增益调整范围**

UR1：–20 到 +35 dB

推荐为吉他使用 -10 dB 设置

UR2：–10 到 +20 dB

**调制**

FM （最大偏移 45 千赫），带有预突出和消除突出功能

**射频功率输出**

参见上表。

**动态范围**

>A 加权 105 dB

**镜频抑制**

**态范围**

>110 dB 典型

**射频灵敏度**

| UR4S+ | UR4D+ |
|---|---|
| –110 dBm 典型<br>12 dB SINAD | –107 dBm 典型<br>12 dB SINAD |
| –105 dBm 典型<br>30 dB SINAD | –102 dBm 典型<br>30 dB SINAD |

**杂散抑制**

**态范围**

>90 dB 典型

**最终静音（参考 45 千赫偏移)**

>A 加权 100 分贝

**信号极性**

话筒隔膜的正压（或对 WA302 耳机插头尖的正电压）在 XLR 输出针脚 2 （相对于 XLR 针脚 3）和 1/4 英寸输出插孔尖上产生正电压。

**系统失真 （参考 ± 45 千赫偏移，1 千赫调制)**

<0.3% 典型总谐波失真

**功率要求**

UR1、UR2： 两节 1.5V AA 电池

UR4：100 到 240 伏交流，50/60 赫兹

**电流漏极**

UR1、UR2： 最大 180 毫安（常规射频功率设置）

最大 240 毫安（常规射频功率设置）

UR4D+： 最大 0.8 安培

UR4S+： 最大 0.8 安培

**电池寿命（典型)**

UR1、UR2： 9.5 小时（低功率）

6 小时（高功率）

**工作温度范围**

–18° 至 +57° C （0° 至 +135° F）

**注释：** 电池特性可能影响该变化范围的限度

**注释：** 电气安全认可的最高室温是 35°C (95° F)。

**整体尺寸**

UR1： 98 毫米（长）x 60 毫米（宽）x 17 毫米（厚）
（3.84 x 2.38 x 0.66 英寸）

UR2/SM58： 261 毫米 （长） x 51 毫米直径 （10.27 x 2 英寸）

UR2/SM86： 261 毫米长 x 51 毫米直径 （10.27 x 2 英寸）

UR2/SM87A： 254 毫米 x 51 毫米直径 （10 x 2 英寸）

UR2/KSM9/BK, UR2/KSM9/SL： 250 毫米 x 49 毫米直径 （9 7/8 x 1 15/16 英寸）

UR2/BETA 58： 258 毫米长 x 51 毫米直径 （10.15 x 2 英寸）

UR2/BETA 87A、UR2/BETA 87C： 254 毫米 x 50 毫米直径
（10 x 2 英寸）

UR4S+/UR4D+： 44 毫米高 x 483 毫米宽 x 366 毫米厚
（1.72 x 19.000 x 14.39 英寸）

**净重**

UR1： 无电池 97 克（3.4 盎司）

UR2/SM58： 无电池 356 克（12.6 盎司）

UR2/BETA 58： 无电池 314 克（11.1 盎司）

UR2/SM86： 无电池 317 克（11.2 盎司）

UR2/SM87A： 无电池 298 克（10.5 盎司）

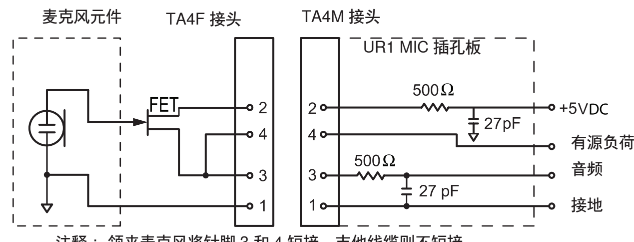
UR2/BETA 87A、U2/BETA 87C： 无电池 325 克（11.5 盎司）

UR2/KSM9/BK, UR2/KSM9/SL： 无电池 410 克（14.5 盎司）

UR4S+： 5.0 公斤（10.9 磅）

UR4D+： 5.1 公斤（11.2 磅）

**接线**




注释： 领夹麦克风将针脚 3 和 4 短接，吉他线缆则不短接。

# 输入和输出

## UR1 发射机音频输入

| 接头： | 4 针插头迷你接头（TA4M） |
|---|---|
| 输入配置： | 非平衡式，有源 |
| 实际阻抗： | >1 毫Ω （有源负荷） |
| 最大输入电平：<br>1 KhZ, 1% THD | +10 dBu, ( 灵敏度 0 dB)<br>+20 dBu, ( 灵敏度 -10 dB) |
| TA4M 接头<br>针脚分配： | 针脚 1：接地<br>针脚 2： +5 伏直流偏压<br>针脚 3：音频<br>针脚 4： 通过有源负荷（在主板上）接地（在乐器适配器线缆上，针脚 4 悬空） |

## UR1 发射机射频输出

| 接头： | SMA |
|---|---|
| 实际阻抗： | 50 Ω |
| 针脚分配： | 外壳 = 接地<br>中间 = 信号 |

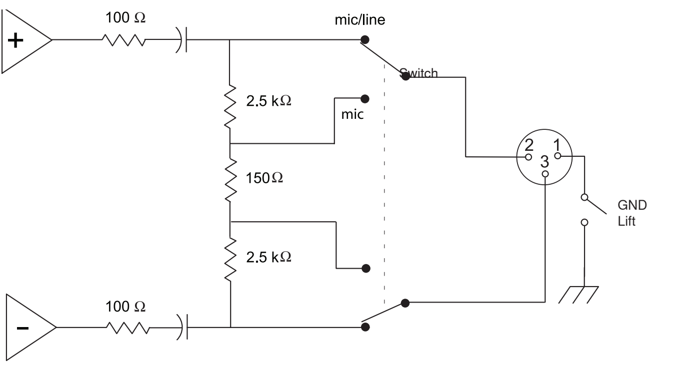
## UR2 发射机音频 输入

| 输入配置： | 非平衡式，有源 |
|---|---|
| 实际阻抗： | >1 毫 Ω （有源负荷） |
| 最大输入电平：1 KhZ, 1% THD | +4.8 dBu |

## 射频分配端口

| | RF IN | RF OUT |
|---|---|---|
| 接头类型 | BNC | BNC |
| 偏压电压 | 12 伏直流,<br>150 毫安 最大值 | 不适用 |

### XLR




## 接收机输入

| | 天线 | 电源 |
|---|---|---|
| 接头类型： | BNC | IEC |
| 实际阻抗： | 50 Ω | - |
| 标称输入电平： | –95 至 –30 dBm | 100-240 伏交流,<br>50/60 赫兹 |
| 最大输入<br>电平： | 推荐值 –20 dBm | 240 伏交流， + 10%,<br>50/60 赫兹 |
| 针脚分配： | 外壳 = 接地<br>中间 = 信号 | IEC 标准 |
| 偏压电压* | 12 伏直流,<br>150 毫安 最大值 | 不适用 |

* 用于远程天线放大器

## 接收机音频输出

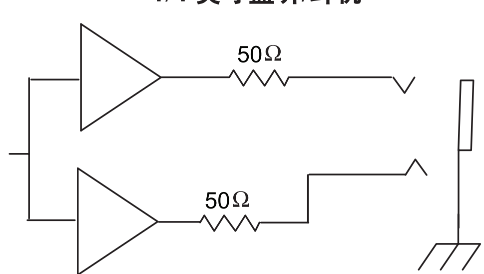
| | 监听（1/4 英寸耳机） | 1/4 英寸耳机 | XLR |
|---|---|---|---|
| 输出配置： | 非平衡单声道，1/4 英寸 | 平衡阻抗 | 电子平衡 |
| 实际阻抗： | 50 Ω | 200 Ω | 200 Ω (子平衡有源)（150 Ω 麦克风） |
| 最大输出电平 | 1 瓦，63 Ω | +18 dBu | +24 dBu （–6 dBu 麦克风）100赫兹调制音频 (XLR) |
| 针脚分配： | 点 = 带电<br>Ring = Hot<br>Sleeve = Gnd | 点 = 带电<br>圈 = 无信号<br>套管 = 接地 | 1 = 接地<br>2 = 音频 +<br>3 = 音频 – |
| 幻象电源保护? | 否 | 是 | 是 |

## 计算机/网络接口

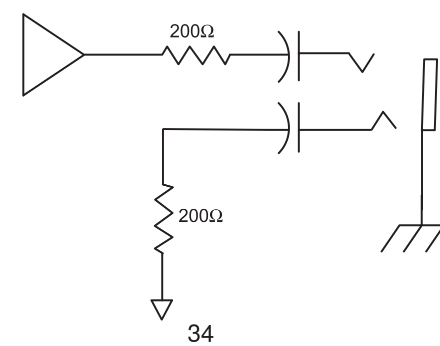
| 以太网 | USB* |
|---|---|
| RJ45 | USB B 系列插座 |

* USB-IF 徽标是 Universal Serial Bus Implementers Forum, Inc 的商标。

### 1/4 英寸监听/耳机




### 1/4 英寸耳机



# 更换部件和附件

## 提供的附件

| 话筒座适配器（UR2） | WA371 |
|---|---|
| 硬件套件，锁定接头 | WA340 |
| 拉锁包 （UR1） | 26A13 |
| 拉锁包 （UR2） | 26A14 |
| 天线延长电缆 （2） | 95B9023 |
| 天线（UR1），518-578 兆赫 | UA710 |
| 天线（UR1），578-698 兆赫 | UA720 |
| 天线（UR1），740-865 兆赫 | UA730 |
| 天线 (UR1)，944-952 兆赫 | UA740 |
| 两条天线（UR4+），取决于波段（参看下表） | UA820 |
| 发射机便携箱 | 95C9053 |
| 两条射频分配电线 | 95N2035 |

## 可选配附件

| 带网罩的 SM58 头 | RPW112 |
|---|---|
| 带网罩的 SM86 头 | RPW114 |
| 带网罩的 BETA 58 头 | RPW118 |
| 带网罩的 BETA 87A 头 | RPW120 |
| 带网罩的 BETA 87C 头 | RPW122 |
| 带网罩的 SM87A 头 | RPW116 |
| 带网罩的 KSM9/SL 头 | RPW180 |
| 带网罩的 KSM9/BK 头 | RPW184 |
| 铳银网罩 （SM58) | RK143G |
| 铳银网罩 （SM86) | RPM266 |
| 铳银网罩 （BETA 58) | RK265G |
| 黑网罩 （SM87) | RK214G |
| 铳银网罩 （BETA 87A) | RK312 |
| 铳银网罩 （BETA 87C) | RK312 |
| 黑网罩 （BETA 58) | RK323G |
| 黑网罩 （BETA 87A/BETA 87C) | RK324G |
| 香宾颜色格栅 (KSM9/SL) | RPM260 |
| 黑网罩 (KSM9/BK) | RPM264 |
| 风屏幕 Popper Stopper™ | A85WS |
| 腰包袋（黑色），UR1 | WA580B |
| 腰包袋（白色），UR1 | WA580W |
| 皮带夹 (UR1) | 44A8031 |

## 天线合并器及附件

- 天线和接收机必须使用同一频段。
- 远程安装或直接安装到 UA845 时可使用提供的 1/2 行波天线。
- UA845 使用的天线和电缆还可用于独立 UHF-R 接收机。

| 无源天线/分配器合成器套件（建议配装两部接收机时使用） | UA221 |
|---|---|
| UHF 天线功率分配放大器 | UA845: |
| 美国 | UA845SWB |
| 欧洲 | UA845E |
| 英国 | UA845UK |
| 1/2 行波，全向，宽带天线 (470-952 MHz) | UA860SWB |
| 有源定向宽带天线 (470-698 MHz) | UA870USTV |
| I有源定向宽带天线 (944-952 MHz) | UA870X |
| 宽带在线射频放大器 (925-932 MHz) | UA870X2 |
| 宽带在线射频放大器 (470-698 MHz) | UA830USTV |
| 宽带在线射频放大器 800-830 MHz | UA830C |
| 宽带在线射频放大器 (925-932 MHz) | UA830X2 |
| 宽带在线射频放大器 (944-952 MHz) | UA830X |

| 无源单向宽频带天线 (470-952 MHz) | PA805WB |
|---|---|
| 无源单向宽频带天线 (470-952 MHz) | PA805X |
| 1/2 行波天线（2） | |
| X1 Band | UA820X |
| G1 波段 | UA820G |
| H4E, H4 波段 | UA820H4 |
| J5E，J5 波段 | UA820J |
| L3E，L3 波段 | UA820L3 |
| Q5、Q6 、Q10A 波段 | UA820Q |
| R9、ABJ 波段 | UA820A |
| 10 英尺天线缆线 | PA725 |
| 25 英尺天线缆线 (RG-8/X) | UA825 |
| 50 英尺天线缆线 (RG-8/X) | UA850 |
| 100 英尺天线缆线 | UA8100 |

## 设计师和工程师规范

无线系统应在频率范围为 518 兆赫至 865, 944-952 兆赫 兆赫的 UHF 波段中工作，具体范围取决于用户所在地区的规定。 系统中应包括用于更改工作频率的选项以避免射频干扰，使多达 160 个系统可以在同一位置同时工作。 预先配置组、频道和频率设置能够确保多个系统在使用中不会相互干扰。

所有发射机均由两节 AA 电池供电，并应带有电源开关。 腰包应具有指示电源是否打开的发光二极管指示灯。 可用发射机应包括： 一个用于电吉它、电贝司和其它电子乐器的腰包，以及一个用于演唱的手持麦克风。 发射机应配备一个直流稳压器，以在电池电压发生变化时能确保稳定的性能。

接收机带有一个用户可编程的菜单操作液晶屏 ，其中可显示组、频道、频率、名称、静噪水平和锁定/解锁状态。 系统应使用诸如 MARCAD 信号组合电路等技术，以提高接收质量，降低信号丢失，以获得可能的最佳信噪比。 应在系统中配备均衡器、音频键控静噪和静噪电路，以提供最佳的音响质量，将噪声降低到最低水平。 接收机应包括双射频表（每条天线一个）、音频电平表和用于计算机控制和监控的网络接口连接器。 接收机应具有音量控制和可调节静噪控制。

系统应是 Shure UHF-R 无线系统。

## 认证

UR1、UR2： 在 FCC 第 74 章（FCC 标识“DD4UR1”和“DD4UR2”）下接受的类型。 在加拿大根据 RSS-123 和 RSS-102 经 IC 认证（“IC 616A-UR1, 616A-UR1G ” 和“IC：616A-UR2, 616A-UR2G”）。 符合欧洲 R&TTE 指导原则 99/5/EC 的基本要求，并可以带有 CE 标志。

UR4S+、UR4D+： 符合 FCC 第 15 章声明的要求。根据 RSS-123 （“IC： 616A-UR4P”）获加拿大工业部认证。 符合欧洲 R&TTE 指导原则 99/5/EC （EN 301 489 第 1 和第 9 章，EN 300 422 第 1 和第 2 章）的基本要求. 可以带有 CE 标志。

符合澳大利亚 EMC 要求并且可以带有 C-Tick 标志。

已经获得以下国家的安全许可：

适用于美国和加拿大的 cULus 标志： 符合 CSA/CAN E60065。 经 UL GS 验证符合 EN60065。

## 放射指定符

120KF3E

## 许可信息：

许可： 在一些特定地区使用可能需要获得主管部门许可证。 请向您所在国家的主管部门咨询相关要求。

未经 Shure Incorporated 明确许可的修改或改进会使您的操作授权失效。获得 Shure 无线麦克风设备的授权是用户的责任，许可情况取决于用户的设备修改和应用情况以及选择的频率。 Shure 强烈建议您在选择和订购产品时，与相关的电信部门联系以确定许可情况。

## 用户相关信息

本设备已经过测试符合 FCC 法规第 15 章有关 B 类数字设备的限制。 这些限制专门用于为在住宅内安装此设备提供防止有害干扰的保护。 本设备产生、使用并可能发射生品能量，如果没有按照要求安装和使用，可能会对无线电通讯产生有害干扰。 但是，并不保证本设备在特定安装情况下不会产生干扰。 如果本设备确实对收音机或电视机的接收产生了有害干扰，可以通过打开本设备然后再关闭的方法确定，建议用户通过以下一种或多种方法自行排除此干扰。

- 调整或重新定向接收天线。
- 增大本设备与接收机之间的间隔距离。
- 将设备连接到与接收机使用的不同电路。
- 向经销商或有经验的收音机/电视技师咨询寻求帮助。

本 B 类数字设备符合加拿大 ICES-003 标准。

必须满足以下两个条件才能够操作本设备： (1) 本设备不产生干扰，并且 (2) 本设备必须能够接受包括可能导致设备意外操作的任何干扰。

注释： EMC 符合性测试是在使用提供的和推荐的缆线类型情况下完成的。 使用其它缆线类型可能会降低 EMC 性能

**FREQUENCY BANDS G1, G7C, H4, H4E, J5, J5E, K4E, L3, L3E, M5E, PS8, P9 Q5, R9, A24, JBX, Q6, Q10A, R16, AND R18**

**SYSTÈMES COMPATIBLES EN FRéQUENCE DANS LA BANDES G1, G7C, H4, H4E, J5, J5E, K4E, L3, L3E, M5E, P8, P9, Q5, R9, A24, JBX, Q6, Q10A, R16 ET R18**

**FREQUENZKOMPATIBLE SYSTEME IM FREQUENZBEREICH G1, G7C, H4, H4E, J5, J5E, K4E, L3, L3E, M5E, P8, P9, Q5, R9, A24, JBX, Q6, Q10A, R16 UND R18**

**SISTEMAS CON FRECUENCIAS COMPATIBLES EN LAS BANDAS G1, G7C, H4, H4E, J5, J5E, K4E, L3, L3E, M5E, P8, P9, Q5, R9, A24, JBX, Q6, Q10A, R16 Y R18**

**SISTEMI COMPATIBILI IN FREQUENZA NELLA BANDAS G1, G7C, H4, H4E, J5, J5E, K4E, L3, L3E, M5E, P8, P9, Q5, R9, A24, JBX, Q6, Q10A, R16 E R18**

**SISTEMAS COM FREQÜÊNCIAS COMPATÍVEIS DA NA FAIXA G1, G7C, H4, H4E, J5, J5E, K4E, L3, L3E, M5E, P8, P9, Q5, R9, A24, JBX, Q6, Q10A, R16 E R18**

## FREQUENCY BAND G1E (470.125–529.875 MHz)

| Channel | Group 1 | Group 2 | Group 3 | Group 4 | Group 5 | Group 6 | Group 7 | Group 8 | Group 9 | Group 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Full Range max. # of compatible frequencies (option 1) 470 - 530 MHz | Full Range max. # of compatible frequencies (option 2) 470 - 530 MHz | France preferred User Group A (option 1) 470 - 530 MHz | France preferred User Group A (option 2) 470 - 530 MHz | France preferred User Group B (option 1) 470 - 530 MHz | France preferred User Group B (option 2) 470 - 530 MHz | France preferred User Group C (option 1) 470 - 530 MHz | France preferred User Group C (option 2) 470 - 530 MHz | Compatible with Group 9 of H4E, J5E and L3E (all these bands completely available) | Compatible with Group 10 of H4E, J5E and L3E (all these bands completely available) |
| 1 | 470.525 | 529.500 | 471.250 | 470.750 | 474.225 | 470.500 | 470.300 | 470.3.00 | 471.150 | 528.600 |
| 2 | 470.975 | 529.050 | 471.750 | 472.500 | 474.975 | 472.775 | 471.000 | 471.000 | 472.550 | 527.200 |
| 3 | 472.000 | 528.025 | 472.500 | 473.250 | 476.900 | 474.225 | 474.775 | 472.975 | 472.925 | 526.825 |
| 4 | 473.725 | 526.300 | 479.500 | 475.250 | 477.300 | 476.900 | 476.700 | 477.100 | 474.225 | 525.525 |
| 5 | 476.725 | 523.300 | 481.250 | 476.250 | 478.500 | 482.225 | 477.100 | 484.700 | 477.775 | 521.975 |
| 6 | 477.550 | 522.475 | 483.250 | 479.500 | 482.975 | 485.300 | 477.900 | 485.500 | 482.825 | 516.925 |
| 7 | 478.875 | 521.150 | 484.250 | 486.750 | 488.025 | 486.100 | 485.100 | 488.975 | 485.475 | 514.275 |
| 8 | 480.850 | 519.175 | 492.250 | 487.250 | 489.500 | 486.500 | 490.025 | 492.000 | 487.575 | 512.175 |
| 9 | 481.200 | 518.825 | 496.500 | 495.750 | 492.900 | 490.975 | 494.300 | 493.500 | 488.350 | 511.400 |
| 10 | 481.775 | 518.250 | 499.750 | 507.500 | 508.900 | 505.500 | 504.225 | 504.975 | 490.825 | 508.925 |
| 11 | 485.200 | 514.825 | 513.250 | 508.250 | 509.700 | 510.500 | 508.700 | 510.300 | 491.800 | 507.950 |
| 12 | 494.275 | 505.750 | 513.750 | 511.500 | 512.025 | 512.775 | 509.900 | 514.025 | 494.775 | 504.975 |
| 13 | 503.650 | 496.375 | 515.250 | 512.500 | 516.500 | 516.500 | 516.700 | 516.700 | 503.225 | 496.525 |
| 14 | 506.075 | 493.950 | 519.750 | 513.750 | 520.025 | 522.225 | 519.000 | 519.000 | 505.575 | 494.175 |
| 15 | 512.300 | 487.725 | 520.500 | 519.750 | 522.225 | 522.975 | 522.025 | 524.700 | 470.500 | 529.250 |
| 16 | 513.500 | 486.525 | 523.500 | 522.500 | 524.900 | 524.900 | 522.775 | 525.100 | 476.550 | 523.200 |
| 17 | 514.875 | 485.150 | 527.500 | 527.250 | 526.100 | 526.100 | 525.500 | 525.900 | 478.700 | 521.050 |
| 18 | 518.075 | 481.950 | 528.500 | 527.750 | 526.500 | 526.500 | 525.900 | 528.975 | 502.200 | 497.550 |
| 19 | 522.475 | 477.550 | 529.750 | 529.250 | 529.500 | 472.025 | 472.225 | 472.225 | 509.950 | 489.800 |
| 20 | 523.075 | 476.950 | 474.500 | 471.500 | 470.500 | 477.300 | 478.300 | 474.775 | 511.025 | 488.725 |
| 21 | 525.400 | 474.625 | 475.500 | 474.500 | 472.025 | 482.975 | 482.775 | 487.000 | 473.675 | 526.075 |
| 22 | 525.775 | 474.250 | 478.750 | 480.500 | 490.225 | 488.025 | 487.000 | 488.225 | 475.025 | 524.725 |
| 23 | 526.475 | 473.550 | 480.500 | 483.250 | 493.300 | 492.900 | 488.225 | 490.025 | 484.650 | 515.100 |
| 24 | 527.350 | 472.675 | 482.500 | 484.250 | 494.100 | 497.500 | 492.700 | 490.775 | 487.150 | 512.600 |
| 25 | 529.500 | 470.525 | 487.500 | 489.750 | 494.500 | 500.900 | 493.900 | 494.300 | 490.275 | 509.475 |
| 26 | 487.475 | 512.550 | 498.500 | 490.500 | 496.775 | 501.300 | 501.100 | 506.025 | 493.650 | 506.100 |
| 27 | 496.375 | 503.650 | 499.250 | 491.750 | 506.225 | 506.225 | 506.025 | 506.775 | 499.475 | 500.275 |
| 28 | 502.825 | 497.200 | 503.500 | 494.750 | 508.500 | 509.300 | 506.775 | 511.000 | 501.600 | 498.150 |
| 29 | 507.000 | 493.025 | 504.500 | 498.500 | 510.100 | 512.025 | 510.300 | 518.300 | 505.100 | 494.650 |
| 30 | 472.775 | 527.250 | 505.250 | 499.500 | 525.300 | 516.900 | 517.500 | 520.225 | 505.875 | 493.875 |
| 31 | 483.300 | 516.725 | 505.750 | 503.750 | 528.775 | 525.300 | 520.225 | 528.225 | 506.425 | 493.325 |
| 32 | 483.725 | 516.300 | 511.500 | 504.500 | | 528.775 | 520.975 | | 513.150 | 486.600 |
| 33 | 486.425 | 513.600 | 515.750 | 510.750 | | | 527.000 | | 529.250 | 470.500 |
| 34 | 488.325 | 511.700 | 519.250 | 514.500 | | | | | | |
| 35 | 489.375 | 510.650 | 526.750 | 523.250 | | | | | | |
| 36 | 498.825 | 501.200 | 529.250 | 524.250 | | | | | | |
| 37 | 499.350 | 500.675 | | 529.750 | | | | | | |
| 38 | 500.725 | 499.300 | | | | | | | | |
| 39 | 505.725 | 494.300 | | | | | | | | |
| 40 | 509.100 | 490.925 | | | | | | | | |
| 41 | 509.500 | 490.525 | | | | | | | | |
| 42 | 514.000 | 486.025 | | | | | | | | |
| 43 | 516.975 | 483.050 | | | | | | | | |
| 44 | 524.650 | 475.375 | | | | | | | | |
| 45 | 528.675 | 471.350 | | | | | | | | |

## G1E FREQUENCY BAND (470.125–529.875 MHz) Continued

| Group | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Channel | European TV channel 21 optimized 470 - 478 MHz | European TV channel 22 optimized 478 - 486 MHz | European TV channel 23 optimized 486 - 494 MHz | European TV channel 24 optimized 494 - 502 MHz | European TV channel 25 optimized 502 - 510 MHz | European TV channel 26 optimized 510 - 518 MHz | European TV channel 27 optimized 518 - 526 MHz | European TV channel 27 optimized 518 - 526 MHz | Full Range (identical with UHF-R G1 / group 9) 470 - 530 MHz | Full Range (identical with UHF-R G1 / group 10) 470 - 530 MHz | Belgium preferred "PRO" 510 - 526 MHz |
| 1 | | 478.100 | 486.100 | 494.100 | 502.100 | 510.100 | 518.100 | 470.250 | 470.125 | 470.375 | 510.375 |
| 2 | 471.350 | 479.350 | 487.350 | 495.350 | 503.350 | 511.350 | 519.350 | 470.875 | 470.750 | 471.000 | 511.200 |
| 3 | 471.975 | 479.975 | 487.975 | 495.975 | 503.975 | 511.975 | 519.975 | 471.775 | 471.650 | 471.900 | 512.325 |
| 4 | 472.800 | 480.800 | 488.800 | 496.800 | 504.800 | 512.800 | 520.800 | 473.075 | 472.950 | 473.200 | 513.650 |
| 5 | 473.325 | 481.325 | 489.325 | 497.325 | 505.325 | 513.325 | 521.325 | 474.025 | 473.900 | 474.150 | 514.675 |
| 6 | 475.775 | 483.775 | 491.775 | 499.775 | 507.775 | 515.775 | 523.775 | 475.700 | 475.575 | 475.825 | 515.175 |
| 7 | 476.200 | 484.200 | 492.200 | 500.200 | 508.200 | 516.200 | 524.200 | 476.525 | 476.400 | 476.650 | 515.900 |
| 8 | 476.925 | 484.925 | 492.925 | 500.925 | 508.925 | 516.925 | 524.925 | 476.975 | 476.850 | 477.100 | 517.325 |
| 9 | 477.850 | 485.850 | 493.850 | 501.850 | 509.850 | 517.850 | 525.850 | 478.600 | 478.475 | 478.725 | 521.900 |
| 10 | 477.275 | 485.275 | 493.275 | 501.275 | 509.275 | 517.275 | 525.275 | 479.425 | 479.300 | 479.550 | 522.525 |
| 11 | | | | | | | | 483.475 | 483.350 | 483.600 | 525.275 |
| 12 | | | | | | | | 483.900 | 483.775 | 484.025 | 525.675 |
| 13 | | | | | | | | 484.575 | 484.450 | 484.700 | 514.000 |
| 14 | | | | | | | | 485.050 | 484.925 | 485.175 | 522.975 |
| 15 | | | | | | | | 489.450 | 489.325 | 489.575 | 511.850 |
| 16 | | | | | | | | 491.875 | 491.750 | 492.000 | 523.675 |
| 17 | | | | | | | | 494.100 | 493.975 | 494.225 | 524.575 |
| 18 | | | | | | | | 495.650 | 495.525 | 495.775 | |
| 19 | | | | | | | | 496.575 | 496.450 | 496.700 | |
| 20 | | | | | | | | 497.725 | 497.600 | 497.850 | |
| 21 | | | | | | | | 498.450 | 498.325 | 498.575 | |
| 22 | | | | | | | | 500.550 | 500.425 | 500.675 | |
| 23 | | | | | | | | 500.950 | 500.825 | 501.075 | |
| 24 | | | | | | | | 501.625 | 501.500 | 501.750 | |
| 25 | | | | | | | | 503.900 | 503.775 | 504.025 | |
| 26 | | | | | | | | 508.325 | 508.200 | 508.450 | |
| 27 | | | | | | | | 510.275 | 510.150 | 510.400 | |
| 28 | | | | | | | | 510.900 | 510.775 | 511.025 | |
| 29 | | | | | | | | 511.850 | 511.725 | 511.975 | |
| 30 | | | | | | | | 513.075 | 512.950 | 513.200 | |
| 31 | | | | | | | | 514.100 | 513.975 | 514.225 | |
| 32 | | | | | | | | 514.600 | 514.475 | 514.725 | |
| 33 | | | | | | | | 518.675 | 518.550 | 518.800 | |
| 34 | | | | | | | | 519.350 | 519.225 | 519.475 | |
| 35 | | | | | | | | 520.425 | 520.300 | 520.550 | |
| 36 | | | | | | | | 521.800 | 521.675 | 521.925 | |
| 37 | | | | | | | | 522.550 | 522.425 | 522.675 | |
| 38 | | | | | | | | 523.525 | 523.400 | 523.650 | |
| 39 | | | | | | | | 526.050 | 525.925 | 526.175 | |
| 40 | | | | | | | | 527.375 | 527.250 | 527.500 | |
| 41 | | | | | | | | 528.025 | 527.900 | 528.150 | |
| 42 | | | | | | | | 529.300 | 529.175 | 529.425 | |
| 43 | | | | | | | | 529.750 | 529.625 | 529.875 | |

| Channel | TV 22 & 27 | TV 23 & 28 | TV 24 & 29 | TV 25 & 30 | TV 26 & 31 | All Bands | All Bands | Full Spectrum | Full Spectrum | Full Spectrum |
|---|---|---|---|---|---|---|---|---|---|---|
| | Group 1 | Group 2 | Group 3 | Group 4 | Group 5 | Group 6 | Group 7 | Group 8 | Group 9 | Group 10 |
| 1 | 518.350 | 524.350 | 530.350 | 536.350 | 542.350 | 519.000 | 519.250 | 518.100 | 518.900 | 518.050 |
| 2 | 518.850 | 524.850 | 530.850 | 536.850 | 542.850 | 519.425 | 521.625 | 518.825 | 519.625 | 518.550 |
| 3 | 519.575 | 525.575 | 531.575 | 537.575 | 543.575 | 522.100 | 525.800 | 519.350 | 520.150 | 519.500 |
| 4 | 520.500 | 526.500 | 532.500 | 538.500 | 544.500 | 524.525 | 526.375 | 520.375 | 521.175 | 519.900 |
| 5 | 521.625 | 527.625 | 533.625 | 539.625 | 545.625 | 525.525 | 528.075 | 521.725 | 522.525 | 520.750 |
| 6 | 522.450 | 528.450 | 534.450 | 540.450 | 546.450 | 526.075 | 533.950 | 522.350 | 523.150 | 523.750 |
| 7 | 523.075 | 529.075 | 535.075 | 541.075 | 547.075 | 527.325 | 535.500 | 525.150 | 525.950 | 530.500 |
| 8 | 523.475 | 529.475 | 535.475 | 541.475 | 547.475 | 528.100 | 538.350 | 530.250 | 531.050 | 532.600 |
| 9 | 548.125 | 554.125 | 560.125 | 566.125 | 572.125 | 537.475 | 542.400 | 530.675 | 531.475 | 534.150 |
| 10 | 548.650 | 554.650 | 560.650 | 566.650 | 572.650 | 540.450 | 543.475 | 532.750 | 533.550 | 538.925 |
| 11 | 549.675 | 555.675 | 561.675 | 567.675 | 573.675 | 541.600 | 547.350 | 534.625 | 535.425 | 541.750 |
| 12 | 551.025 | 557.025 | 563.025 | 569.025 | 575.025 | 544.925 | 553.625 | 543.475 | 544.275 | 545.500 |
| 13 | 551.750 | 557.750 | 563.750 | 569.750 | 575.750 | 551.625 | 561.075 | 544.700 | 545.500 | 546.425 |
| 14 | 552.150 | 558.150 | 564.150 | 570.150 | 576.150 | 553.300 | 565.700 | 547.325 | 548.125 | 547.875 |
| 15 | 552.975 | 558.975 | 564.975 | 570.975 | 576.975 | 555.300 | 569.050 | 548.775 | 549.575 | 550.500 |
| 16 | 553.600 | 559.600 | 565.600 | 571.600 | 577.600 | 557.075 | 570.775 | 549.700 | 550.500 | 551.725 |
| 17 | | | | | | 561.100 | 571.550 | 553.450 | 554.250 | 560.575 |
| 18 | | | | | | 566.000 | 572.800 | 556.275 | 557.075 | 562.450 |
| 19 | | | | | | 567.550 | 573.425 | 561.050 | 561.850 | 564.525 |
| 20 | | | | | | 574.475 | 573.825 | 562.600 | 563.400 | 564.950 |
| 21 | | | | | | 518.350 | 519.875 | 564.700 | 565.500 | 570.050 |
| 22 | | | | | | 544.325 | 520.275 | 571.450 | 572.250 | 572.850 |
| 23 | | | | | | 548.550 | 522.425 | 574.450 | 575.250 | 573.475 |
| 24 | | | | | | 554.050 | 546.925 | 575.300 | 576.100 | 574.825 |
| 25 | | | | | | 559.900 | 555.750 | 575.700 | 576.500 | 575.850 |
| 26 | | | | | | 520.125 | 521.050 | 576.650 | 577.450 | 576.375 |
| 27 | | | | | | 535.025 | 536.475 | 577.150 | 577.950 | 577.100 |
| 28 | | | | | | 550.450 | 537.250 | 523.850 | 524.650 | 522.450 |
| 29 | | | | | | 573.625 | 539.250 | 548.300 | 549.100 | 546.900 |
| 30 | | | | | | 575.850 | 544.000 | 572.750 | 573.550 | 571.350 |
| 31 | | | | | | 522.650 | 548.950 | 529.350 | 530.150 | 524.425 |
| 32 | | | | | | 531.375 | 552.050 | 533.950 | 534.750 | 528.625 |
| 33 | | | | | | 538.475 | 561.975 | 537.925 | 538.725 | 529.675 |
| 34 | | | | | | 539.100 | 566.200 | 561.950 | 562.750 | 533.250 |
| 35 | | | | | | 554.450 | 567.125 | 565.525 | 566.325 | 557.275 |
| 36 | | | | | | 564.775 | 575.050 | 566.575 | 567.375 | 561.250 |
| 37 | | | | | | | | 570.775 | 571.575 | 565.850 |
| 38 | | | | | | | | 535.750 | 536.550 | 525.775 |
| 39 | | | | | | | | 551.700 | 552.500 | 543.500 |
| 40 | | | | | | | | 569.425 | 570.225 | 559.450 |

## J5 FREQUENCY BAND (578.000 - 607.975 - 614.025 - 638.000 MHz)

| Channel | TV 32 | TV 33 & 38 | TV 34 & 39 | TV 35 & 40 | TV 36 & 41 | All Bands | All Bands | Full Spectrum | Full Spectrum | Full Spectrum |
|---|---|---|---|---|---|---|---|---|---|---|
| | Group 1 | Group 2 | Group 3 | Group 4 | Group 5 | Group 6 | Group 7 | Group 8 | Group 9 | Group 10 |
| 1 | 578.350 | 584.350 | 590.350 | 596.350 | 602.350 | 578.625 | 581.650 | 578.375 | 578.125 | 578.100 |
| 2 | 578.850 | 584.850 | 590.850 | 596.850 | 602.850 | 579.125 | 586.625 | 579.400 | 578.550 | 579.125 |
| 3 | 579.575 | 585.575 | 591.575 | 597.575 | 603.575 | 584.825 | 588.025 | 581.750 | 579.200 | 581.475 |
| 4 | 580.500 | 586.500 | 592.500 | 598.500 | 604.500 | 586.475 | 592.275 | 582.625 | 580.600 | 582.350 |
| 5 | 581.625 | 587.625 | 593.625 | 599.625 | 605.625 | 587.750 | 595.225 | 584.675 | 581.150 | 584.400 |
| 6 | 582.450 | 588.450 | 594.450 | 600.450 | 606.450 | 588.500 | 597.675 | 587.350 | 584.500 | 587.075 |
| 7 | 583.075 | 589.075 | 595.075 | 601.075 | 607.075 | 592.950 | 601.750 | 588.825 | 585.375 | 588.550 |
| 8 | 583.475 | 589.475 | 595.475 | 601.475 | 607.475 | 598.975 | 602.175 | 589.225 | 588.950 | 588.950 |
| 9 | | 614.125 | 620.125 | 626.125 | 632.125 | 599.875 | 604.300 | 594.200 | 591.175 | 593.925 |
| 10 | | 614.650 | 620.650 | 626.650 | 632.650 | 615.900 | 607.675 | 594.725 | 593.925 | 594.450 |
| 11 | | 615.675 | 621.675 | 627.675 | 633.675 | 617.600 | 614.425 | 596.975 | 595.225 | 596.700 |
| 12 | | 617.025 | 623.025 | 629.025 | 635.025 | 618.400 | 620.650 | 603.475 | 604.150 | 603.200 |
| 13 | | 617.750 | 623.750 | 629.750 | 635.750 | 621.350 | 622.025 | 606.050 | 604.875 | 605.775 |
| 14 | | 618.150 | 624.150 | 630.150 | 636.150 | 621.750 | 623.800 | 607.725 | 606.275 | 607.450 |
| 15 | | 618.975 | 624.975 | 630.975 | 636.975 | 627.925 | 625.000 | 616.200 | 618.025 | 615.925 |
| 16 | | 619.600 | 625.600 | 631.600 | 637.600 | 629.975 | 630.175 | 619.250 | 620.825 | 618.975 |
| 17 | | | | | | 631.025 | 632.250 | 620.600 | 621.975 | 620.325 |
| 18 | | | | | | 633.175 | 633.750 | 622.525 | 625.325 | 622.250 |
| 19 | | | | | | 635.050 | 636.275 | 628.650 | 627.250 | 628.375 |
| 20 | | | | | | 636.650 | 637.075 | 630.200 | 630.500 | 629.925 |
| 21 | | | | | | 585.400 | 587.450 | 631.175 | 632.325 | 630.900 |
| 22 | | | | | | 587.300 | 598.975 | 632.375 | 633.100 | 632.100 |
| 23 | | | | | | 602.025 | 627.775 | 632.875 | 635.275 | 632.600 |
| 24 | | | | | | 616.425 | 632.825 | 635.825 | 636.175 | 635.550 |
| 25 | | | | | | 619.975 | 637.575 | 636.900 | 636.700 | 636.625 |
| 26 | | | | | | 591.225 | 583.175 | 637.625 | 637.700 | 637.350 |
| 27 | | | | | | 603.075 | 588.950 | 581.200 | 582.425 | 580.925 |
| 28 | | | | | | 605.650 | 590.825 | 586.450 | 587.650 | 586.175 |
| 29 | | | | | | 628.625 | 596.900 | 592.725 | 588.050 | 592.450 |
| 30 | | | | | | 631.700 | 599.425 | 597.900 | 598.350 | 597.625 |
| 31 | | | | | | 580.225 | 600.700 | 598.600 | 599.575 | 598.325 |
| 32 | | | | | | 592.500 | 614.975 | 604.000 | 600.600 | 603.725 |
| 33 | | | | | | 601.575 | 616.700 | 605.350 | 603.700 | 605.075 |
| 34 | | | | | | 606.075 | 619.525 | 614.450 | 607.075 | 614.175 |
| 35 | | | | | | 607.575 | 623.050 | 615.600 | 614.925 | 615.325 |
| 36 | | | | | | 633.650 | 635.775 | 617.150 | 615.600 | 616.875 |
| 37 | | | | | | | | 620.175 | 617.025 | 619.900 |
| 38 | | | | | | | | 621.725 | 619.900 | 621.450 |
| 39 | | | | | | | | 623.850 | 622.500 | 623.575 |
| 40 | | | | | | | | 634.225 | 631.150 | 633.950 |

| Channel | TV 42 & 47 | TV 43 & 48 | TV 44 & 49 | TV 45 & 50 | TV 46 & 51 | All Bands | All Bands | Full Spectrum | Full Spectrum | Full Spectrum |
|---|---|---|---|---|---|---|---|---|---|---|
| | Group 1 | Group 2 | Group 3 | Group 4 | Group 5 | Group 6 | Group 7 | Group 8 | Group 9 | Group 10 |
| 1 | 638.350 | 644.350 | 650.350 | 656.350 | 662.350 | 643.775 | 649.800 | 638.100 | 638.900 | 638.050 |
| 2 | 638.850 | 644.850 | 650.850 | 656.850 | 662.850 | 644.375 | 650.800 | 638.825 | 639.625 | 638.550 |
| 3 | 639.575 | 645.575 | 651.575 | 657.575 | 663.575 | 651.900 | 653.000 | 639.350 | 640.150 | 639.500 |
| 4 | 640.500 | 646.500 | 652.500 | 658.500 | 664.500 | 654.150 | 659.550 | 640.375 | 641.175 | 639.900 |
| 5 | 641.625 | 647.625 | 653.625 | 659.625 | 665.625 | 660.375 | 660.775 | 641.725 | 642.525 | 640.750 |
| 6 | 642.450 | 648.450 | 654.450 | 660.450 | 666.450 | 661.125 | 661.350 | 642.350 | 643.150 | 643.750 |
| 7 | 643.075 | 649.075 | 655.075 | 661.075 | 667.075 | 662.875 | 665.425 | 645.150 | 645.950 | 650.500 |
| 8 | 643.475 | 649.475 | 655.475 | 661.475 | 667.475 | 664.300 | 668.050 | 650.250 | 651.050 | 652.600 |
| 9 | 668.125 | 674.125 | 680.125 | 686.125 | 692.125 | 667.125 | 675.575 | 650.675 | 651.475 | 654.150 |
| 10 | 668.650 | 674.650 | 680.650 | 686.650 | 692.650 | 669.500 | 679.750 | 652.750 | 653.550 | 658.925 |
| 11 | 669.675 | 675.675 | 681.675 | 687.675 | 693.675 | 679.000 | 683.450 | 654.625 | 655.425 | 661.750 |
| 12 | 671.025 | 677.025 | 683.025 | 689.025 | 695.025 | 683.525 | 684.875 | 663.475 | 664.275 | 665.500 |
| 13 | 671.750 | 677.750 | 683.750 | 689.750 | 695.750 | 688.825 | 686.800 | 664.700 | 665.500 | 666.425 |
| 14 | 672.150 | 678.150 | 684.150 | 690.150 | 696.150 | 689.750 | 691.750 | 667.325 | 668.125 | 667.875 |
| 15 | 672.975 | 678.975 | 684.975 | 690.975 | 696.975 | 690.425 | 692.300 | 668.775 | 669.575 | 670.500 |
| 16 | 673.600 | 679.600 | 685.600 | 691.600 | 697.600 | 691.500 | 693.050 | 669.700 | 670.500 | 671.725 |
| 17 | | | | | | 693.525 | 693.500 | 673.450 | 674.250 | 680.575 |
| 18 | | | | | | 694.725 | 695.550 | 676.275 | 677.075 | 682.450 |
| 19 | | | | | | 697.075 | 696.200 | 681.050 | 681.850 | 684.525 |
| 20 | | | | | | 697.575 | 697.100 | 682.600 | 683.400 | 684.950 |
| 21 | | | | | | 649.125 | 645.875 | 684.700 | 685.500 | 690.050 |
| 22 | | | | | | 658.825 | 658.800 | 691.450 | 692.250 | 692.850 |
| 23 | | | | | | 662.200 | 663.675 | 694.450 | 695.250 | 693.475 |
| 24 | | | | | | 677.025 | 664.800 | 695.300 | 696.100 | 694.825 |
| 25 | | | | | | 682.675 | 678.400 | 695.700 | 696.500 | 695.850 |
| 26 | | | | | | 650.050 | 646.825 | 696.650 | 697.450 | 696.375 |
| 27 | | | | | | 651.450 | 648.050 | 697.150 | 697.950 | 697.100 |
| 28 | | | | | | 671.075 | 651.275 | 643.850 | 644.650 | 642.450 |
| 29 | | | | | | 677.600 | 657.075 | 668.300 | 669.100 | 666.900 |
| 30 | | | | | | 695.200 | 662.350 | 692.750 | 693.550 | 691.350 |
| 31 | | | | | | 647.450 | 674.950 | 649.350 | 650.150 | 644.425 |
| 32 | | | | | | 648.400 | 679.350 | 653.950 | 654.750 | 648.625 |
| 33 | | | | | | 666.000 | 680.750 | 657.925 | 658.725 | 649.675 |
| 34 | | | | | | 675.900 | 682.500 | 681.950 | 682.750 | 653.250 |
| 35 | | | | | | 679.525 | 685.450 | 685.525 | 686.325 | 677.275 |
| 36 | | | | | | 696.250 | 689.700 | 686.575 | 687.375 | 681.250 |
| 37 | | | | | | | | 690.775 | 691.575 | 685.850 |
| 38 | | | | | | | | 655.750 | 656.550 | 645.775 |
| 39 | | | | | | | | 671.700 | 672.500 | 663.500 |
| 40 | | | | | | | | 689.425 | 690.225 | 679.450 |

| Channel | Full Range max. # of comp. frequencies (option 1) | Full Range max. # of comp. frequencies (option 2) | France preferred: User Group A (option 1) | France preferred: User Group A (option 2) | France preferred: User Group B (option 1) | France preferred: User Group B (option 2) | France preferred: User Group C (option 1) | France preferred: User Group C (option 2) | All Bands | All Bands |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Group 1** | **Group 2** | **Group 3** | **Group 4** | **Group 5** | **Group 6** | **Group 7** | **Group 8** | **Group 9** | **Group 10** |
| **1** | 518.100 | 518.900 | 518.750 | 518.750 | 518.100 | 518.500 | 520.225 | 518.300 | 518.500 | 518.575 |
| **2** | 518.825 | 519.625 | 519.500 | 519.500 | 521.500 | 520.025 | 522.025 | 519.000 | 522.250 | 520.300 |
| **3** | 519.350 | 520.150 | 521.250 | 520.500 | 522.975 | 522.225 | 522.775 | 522.025 | 523.675 | 521.750 |
| **4** | 520.375 | 521.175 | 523.250 | 521.750 | 525.700 | 522.975 | 525.900 | 524.000 | 524.500 | 522.300 |
| **5** | 521.725 | 522.525 | 524.250 | 523.250 | 532.500 | 524.900 | 526.300 | 530.025 | 526.350 | 526.350 |
| **6** | 522.350 | 523.150 | 527.500 | 526.750 | 532.900 | 530.225 | 533.500 | 532.700 | 528.000 | 527.525 |
| **7** | 525.150 | 525.950 | 535.250 | 527.250 | 534.500 | 536.775 | 535.000 | 533.500 | 528.500 | 527.975 |
| **8** | 530.250 | 531.050 | 536.500 | 531.500 | 538.975 | 540.900 | 536.225 | 533.900 | 531.900 | 531.800 |
| **9** | 530.675 | 531.475 | 543.750 | 537.250 | 544.775 | 545.500 | 541.500 | 542.300 | 535.075 | 535.400 |
| **10** | 532.750 | 533.550 | 547.750 | 547.500 | 546.975 | 549.300 | 550.300 | 546.775 | 542.700 | 536.275 |
| **11** | 534.625 | 535.425 | 548.250 | 550.750 | 550.100 | 550.500 | 557.100 | 549.900 | 543.425 | 540.975 |
| **12** | 543.475 | 544.275 | 550.750 | 554.500 | 561.500 | 556.500 | 560.975 | 560.225 | 552.550 | 547.975 |
| **13** | 544.700 | 545.500 | 552.500 | 562.500 | 565.300 | 556.900 | 562.775 | 560.975 | 553.725 | 551.225 |
| **14** | 547.325 | 548.125 | 561.750 | 563.500 | 565.700 | 568.025 | 568.225 | 568.225 | 565.425 | 551.950 |
| **15** | 548.775 | 549.575 | 567.500 | 569.250 | 568.025 | 570.975 | 570.775 | 570.775 | 566.025 | 552.950 |
| **16** | 549.700 | 550.500 | 571.250 | 571.750 | 572.500 | 572.900 | 572.000 | 572.700 | 568.125 | 557.250 |
| **17** | 553.450 | 554.250 | 574.750 | 572.250 | 574.100 | 573.700 | 572.700 | 573.100 | 571.675 | 558.400 |
| **18** | 556.275 | 557.075 | 575.750 | 575.750 | 576.025 | 576.025 | 574.300 | 574.300 | 572.150 | 558.800 |
| **19** | 561.050 | 561.850 | 577.250 | 576.500 | 577.500 | 577.500 | 576.975 | 576.975 | 573.675 | 561.800 |
| **20** | 562.600 | 563.400 | 577.750 | 577.750 | 520.775 | 518.100 | 520.975 | 520.975 | 576.650 | 568.375 |
| **21** | 564.700 | 565.500 | 520.500 | 528.500 | 534.100 | 525.300 | 525.100 | 528.225 | 536.075 | 525.650 |
| **22** | 571.450 | 572.250 | 521.750 | 529.250 | 538.225 | 528.775 | 536.975 | 540.700 | 556.975 | 553.600 |
| **23** | 574.450 | 575.250 | 530.500 | 530.500 | 540.900 | 533.300 | 540.000 | 544.225 | 560.575 | 567.575 |
| **24** | 575.300 | 576.100 | 531.250 | 538.500 | 541.700 | 533.700 | 542.300 | 550.300 | 519.125 | 523.575 |
| **25** | 575.700 | 576.500 | 534.750 | 540.250 | 546.225 | 546.225 | 556.000 | 556.000 | 521.700 | 533.050 |
| **26** | 576.650 | 577.450 | 537.250 | 543.750 | 549.700 | 549.700 | 556.700 | 556.700 | 539.550 | 556.700 |
| **27** | 577.150 | 577.950 | 540.250 | 544.500 | 552.025 | 552.025 | 557.900 | 557.100 | 554.600 | 566.125 |
| **28** | 523.850 | 524.650 | 546.500 | 545.750 | 560.775 | 554.975 | 566.300 | 557.900 | 558.050 | 572.000 |
| **29** | 548.300 | 549.100 | 551.500 | 551.500 | 564.500 | 565.700 | 575.000 | 562.775 | 539.025 | 518.050 |
| **30** | 572.750 | 573.550 | 554.500 | 552.500 | 566.500 | 568.775 | 576.225 | 566.300 | 540.725 | 536.675 |
| **31** | 529.350 | 530.150 | 555.500 | 556.250 | 573.700 | 572.500 | | | 545.100 | 538.375 |
| **32** | 533.950 | 534.750 | 560.500 | 558.750 | | | | | 556.125 | 571.175 |
| **33** | 537.925 | 538.725 | 563.500 | 559.750 | | | | | 557.400 | 573.100 |
| **34** | 561.950 | 562.750 | 564.250 | 567.500 | | | | | 570.000 | 575.250 |
| **35** | 565.525 | 566.325 | 569.250 | 568.500 | | | | | | |
| **36** | 566.575 | 567.375 | 570.500 | 569.750 | | | | | | |
| **37** | 570.775 | 571.575 | | | | | | | | |
| **38** | 535.750 | 536.550 | | | | | | | | |
| **39** | 551.700 | 552.500 | | | | | | | | |
| **40** | 569.425 | 570.225 | | | | | | | | |

| Channel | Full Range max. # of comp. frequencies (option 1) | Full Range max. # of comp. frequencies (option 2) | France preferred: User Group A (option 1) | France preferred: User Group A (option 2) | France preferred: User Group B (option 1) | France preferred: User Group B (option 2) | France preferred: User Group C (option 1) | France preferred: User Group C (option 2) | All Bands | All Bands |
|---|---|---|---|---|---|---|---|---|---|---|
| | Group 1 | Group 2 | Group 3 | Group 4 | Group 5 | Group 6 | Group 7 | Group 8 | Group 9 | Group 10 |
| 1 | 578.375 | 578.375 | 578.500 | 578.500 | 578.225 | 578.225 | 578.775 | 580.000 | 589.375 | 581.050 |
| 2 | 579.400 | 579.100 | 579.250 | 579.250 | 578.975 | 578.975 | 580.000 | 580.700 | 590.525 | 582.400 |
| 3 | 581.750 | 580.175 | 579.750 | 582.750 | 580.900 | 580.900 | 582.300 | 581.100 | 591.175 | 583.950 |
| 4 | 582.625 | 583.125 | 583.250 | 583.250 | 582.500 | 581.300 | 583.000 | 581.900 | 595.300 | 584.950 |
| 5 | 584.675 | 583.625 | 585.750 | 585.750 | 585.500 | 582.500 | 584.975 | 584.975 | 596.350 | 585.700 |
| 6 | 587.350 | 584.825 | 587.500 | 591.750 | 593.500 | 586.975 | 589.100 | 591.000 | 600.375 | 589.250 |
| 7 | 588.825 | 585.800 | 593.250 | 593.250 | 594.975 | 592.025 | 592.225 | 594.775 | 601.875 | 589.900 |
| 8 | 589.225 | 587.350 | 595.500 | 595.500 | 597.300 | 598.500 | 597.100 | 597.500 | 602.825 | 591.125 |
| 9 | 594.200 | 593.475 | 598.750 | 604.250 | 604.900 | 606.100 | 597.900 | 605.900 | 604.925 | 593.350 |
| 10 | 594.725 | 595.400 | 610.500 | 607.500 | 605.700 | 608.775 | 605.500 | 606.300 | 605.700 | 599.100 |
| 11 | 596.975 | 596.750 | 611.250 | 608.500 | 606.100 | 609.500 | 608.975 | 608.225 | 616.900 | 610.300 |
| 12 | 603.475 | 599.800 | 615.500 | 609.250 | 610.975 | 610.975 | 610.775 | 610.775 | 622.650 | 611.075 |
| 13 | 606.050 | 608.275 | 623.250 | 617.750 | 624.775 | 620.900 | 621.500 | 621.100 | 624.875 | 613.175 |
| 14 | 607.725 | 609.950 | 623.750 | 623.250 | 626.975 | 624.775 | 623.000 | 624.975 | 626.100 | 614.125 |
| 15 | 616.200 | 612.525 | 625.750 | 623.750 | 628.900 | 628.900 | 628.000 | 626.775 | 626.750 | 615.625 |
| 16 | 619.250 | 619.025 | 631.750 | 625.750 | 630.500 | 630.500 | 628.700 | 631.000 | 630.300 | 619.650 |
| 17 | 620.600 | 621.275 | 633.250 | 633.250 | 636.500 | 634.225 | 634.775 | 634.025 | 631.050 | 620.700 |
| 18 | 622.525 | 621.800 | 634.500 | 634.500 | 636.900 | 634.975 | 636.700 | 634.775 | 632.050 | 624.825 |
| 20 | 630.200 | 627.175 | 636.250 | 636.250 | 580.500 | 637.700 | 637.900 | 637.500 | 634.950 | 626.625 |
| 21 | 631.175 | 628.650 | 583.750 | 580.250 | 584.775 | 586.225 | 578.025 | 584.225 | 594.000 | 586.250 |
| 22 | 632.375 | 631.325 | 585.250 | 587.750 | 596.900 | 588.500 | 594.025 | 596.000 | 620.625 | 595.375 |
| 23 | 632.875 | 633.375 | 599.500 | 590.750 | 598.100 | 589.300 | 594.775 | 598.300 | 629.750 | 622.000 |
| 24 | 635.825 | 634.250 | 600.500 | 594.500 | 598.500 | 600.025 | 596.700 | 605.100 | 579.850 | 593.850 |
| 25 | 636.900 | 636.600 | 601.750 | 599.750 | 600.775 | 604.500 | 606.300 | 608.975 | 580.950 | 607.800 |
| 26 | 637.625 | 637.625 | 602.500 | 601.750 | 610.225 | 605.700 | 610.025 | 620.700 | 586.800 | 629.200 |
| 27 | 581.200 | 581.775 | 603.750 | 602.500 | 616.775 | 614.100 | 621.900 | 621.900 | 608.200 | 635.050 |
| 28 | 586.450 | 592.150 | 606.750 | 603.500 | 621.700 | 621.700 | 626.775 | 622.300 | 622.150 | 636.150 |
| 29 | 592.725 | 594.275 | 608.500 | 611.250 | 626.225 | 626.225 | 630.300 | 624.225 | 598.250 | 581.900 |
| 30 | 597.900 | 595.825 | 609.250 | 615.500 | 630.100 | 626.975 | 631.000 | 630.300 | 606.250 | 598.100 |
| 31 | 598.600 | 598.850 | 612.250 | 619.250 | 634.225 | 630.100 | | | 611.900 | 603.050 |
| 32 | 604.000 | 600.400 | 619.500 | 620.250 | 634.975 | 636.500 | | | 612.950 | 604.100 |
| 33 | 605.350 | 601.550 | 620.250 | 625.250 | | | | | 617.900 | 609.750 |
| 34 | 614.450 | 610.650 | 625.250 | 626.500 | | | | | 634.100 | 617.750 |
| 35 | 615.600 | 612.000 | 626.500 | 631.500 | | | | | | |
| 36 | 617.150 | 617.400 | 633.750 | 632.500 | | | | | | |
| 37 | 620.175 | 618.100 | | | | | | | | |
| 38 | 621.725 | 623.275 | | | | | | | | |
| 39 | 623.850 | 629.550 | | | | | | | | |
| 40 | 634.225 | 634.800 | | | | | | | | |

# K4E FREQUENCY BAND (606–666 MHz)

| Channel | Group 1<br>Full Range max. # of compatible frequencies 606 - 666 MHz (option 1) | Group 2<br>Full Range max. # of compatible frequencies 606 - 666 MHz (option 2) | Group 3<br>Full Range max. # of compatible frequencies 606 - 666 MHz (option 3) | Group 4<br>Full Range excl. TV ch. 38, max. # of compatible frequencies, 614-666 MHz (option 1) | Group 5<br>Full Range excl. TV ch. 38, max. # of compatible frequencies, 614-666 MHz (option 2) | Group 6<br>U.K. preferred: TV ch. 38 606-614 MHz with 125 kHz guard band (option 1) | Group 7<br>U.K. preferred: TV ch. 38 606-614 MHz with 125 kHz guard band (option 2) | Group 8<br>U.K. preferred: TV ch. 38 606-614 MHz with 125 kHz guard band (option 3) | Group 9<br>U.K. preferred: TV ch. 38 606-614 MHz with 500 kHz guard band (option 1) | Group 10<br>U.K. preferred: TV ch. 38 606-614 MHz with 500 kHz guard band (option 2) | Group 11<br>U.K. preferred: TV ch. 38 606-614 MHz with 500 kHz guard band (option 3) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 606.825 | 606.375 | 606.675 | 615.600 | 614.475 | 606.175 | 607.000 | 606.275 | 606.825 | 607.000 | 606.625 |
| 2 | 607.375 | 606.750 | 607.225 | 616.125 | 614.925 | 608.050 | 607.350 | 606.875 | 607.250 | 607.625 | 607.675 |
| 3 | 608.300 | 607.550 | 609.500 | 617.325 | 615.550 | 609.125 | 608.400 | 607.800 | 607.975 | 608.975 | 608.525 |
| 4 | 610.125 | 609.500 | 609.950 | 617.725 | 617.475 | 609.525 | 608.850 | 608.200 | 608.900 | 609.500 | 610.175 |
| 5 | 612.525 | 610.475 | 611.100 | 620.050 | 619.675 | 611.775 | 610.875 | 610.925 | 610.350 | 610.750 | 610.625 |
| 6 | 613.900 | 611.825 | 612.875 | 620.775 | 622.075 | 612.600 | 611.625 | 611.725 | 611.175 | 612.250 | 611.575 |
| 7 | 616.200 | 614.850 | 614.250 | 622.075 | 622.425 | 613.100 | 612.175 | 613.350 | 612.525 | 612.975 | 612.175 |
| 8 | 620.125 | 616.675 | 619.600 | 625.725 | 631.700 | 613.825 | 613.825 | 613.850 | 613.150 | 613.400 | 613.375 |
| 9 | 622.975 | 620.525 | 620.550 | 631.225 | 632.425 | 606.775 | 613.175 | 610.475 | 611.550 | 611.775 | 607.275 |
| 10 | 623.625 | 621.175 | 623.175 | 633.050 | 633.750 | 607.550 | 606.475 | 612.050 | 608.350 | 606.550 | 611.275 |
| 11 | 624.700 | 627.200 | 628.700 | 634.550 | 638.125 | 611.200 | | | | | |
| 12 | 639.075 | 629.400 | 639.975 | 646.250 | 639.075 | | | | | | |
| 13 | 641.600 | 633.025 | 641.450 | 650.825 | 647.500 | | | | | | |
| 14 | 647.000 | 645.200 | 644.475 | 651.625 | 651.475 | | | | | | |
| 15 | 647.450 | 648.700 | 645.725 | 652.150 | 653.675 | | | | | | |
| 16 | 650.800 | 649.200 | 652.300 | 654.850 | 654.525 | | | | | | |
| 17 | 652.200 | 650.050 | 653.025 | 655.750 | 656.475 | | | | | | |
| 18 | 656.775 | 651.700 | 655.475 | 657.750 | 662.000 | | | | | | |
| 19 | 658.575 | 655.475 | 659.125 | 661.225 | 662.525 | | | | | | |
| 20 | 660.950 | 658.700 | 659.500 | 662.875 | 663.675 | | | | | | |
| 21 | 661.725 | 660.725 | 661.375 | 664.975 | 664.350 | | | | | | |
| 22 | 662.075 | 663.125 | 662.400 | 665.675 | 665.750 | | | | | | |
| 23 | 663.000 | 664.600 | 662.975 | 614.200 | 621.300 | | | | | | |
| 24 | 663.675 | 665.300 | 664.125 | 628.225 | 625.475 | | | | | | |
| 25 | 610.950 | 608.025 | 607.575 | 633.500 | 635.625 | | | | | | |
| 26 | 621.650 | 619.650 | 616.825 | 654.475 | 660.525 | | | | | | |
| 27 | 622.000 | 637.075 | 618.350 | 659.175 | 661.000 | | | | | | |
| 28 | 634.275 | 643.900 | 627.375 | 661.825 | 663.275 | | | | | | |
| 29 | 648.325 | 651.150 | 643.400 | 622.600 | 615.875 | | | | | | |
| 30 | 664.650 | 662.525 | 650.175 | 631.875 | 620.775 | | | | | | |
| 31 | 665.825 | 663.450 | 664.975 | 632.225 | 626.400 | | | | | | |
| 32 | 608.600 | 616.300 | 608.175 | 637.050 | 632.900 | | | | | | |
| 33 | 611.425 | 617.525 | 616.425 | 637.475 | 634.775 | | | | | | |
| 34 | 620.725 | 624.025 | 621.100 | 638.250 | 639.850 | | | | | | |
| 35 | 626.175 | 627.825 | 624.500 | 638.550 | 648.250 | | | | | | |
| 36 | 626.775 | 630.000 | 631.800 | 649.050 | 648.825 | | | | | | |
| 37 | 628.050 | 630.800 | 633.175 | 652.950 | 652.225 | | | | | | |
| 38 | 628.475 | 633.400 | 635.750 | 662.225 | 653.200 | | | | | | |
| 39 | 629.100 | 634.125 | 637.425 | 664.100 | 657.200 | | | | | | |
| 40 | 637.650 | 635.750 | 639.325 | | | | | | | | |
| 41 | 640.250 | 646.075 | 646.325 | | | | | | | | |
| 42 | 642.100 | 649.500 | 650.775 | | | | | | | | |
| 43 | 644.650 | 655.775 | 656.425 | | | | | | | | |
| 44 | 645.300 | 657.775 | 663.825 | | | | | | | | |
| 45 | 657.850 | 664.125 | 665.475 | | | | | | | | |

| Channel | Group 12 | Group 13 | Group 14 | Group 15 | Group 16 | Group 17 | Group 18 | Group 19 | Group 20 |
|---|---|---|---|---|---|---|---|---|---|
| | France preferred: User Group A 614 - 666 MHz (option 1) | France preferred: User Group A 614 - 666 MHz (option 2) | France preferred: User Group A 614 - 666 MHz (option 3) | France preferred: User Group B 614 - 666 MHz (option 1) | France preferred: User Group B 614 - 666 MHz (option 2) | France preferred: User Group B 614 - 666 MHz (option 3) | France preferred: User Group C 614 - 666 MHz (option 1) | France preferred: User Group C 614 - 666 MHz (option 2) | France preferred: User Group C 614 - 666 MHz (option 3) |
| 1 | 614.750 | 615.750 | 615.500 | 614.100 | 616.775 | 614.500 | 616.975 | 614.300 | 614.300 |
| 2 | 615.750 | 618.500 | 617.750 | 614.500 | 618.975 | 618.225 | 618.775 | 616.975 | 615.000 |
| 3 | 618.500 | 619.250 | 619.500 | 616.025 | 620.900 | 620.500 | 620.000 | 618.775 | 616.225 |
| 4 | 619.250 | 623.250 | 620.250 | 618.975 | 622.100 | 621.300 | 624.975 | 622.300 | 620.700 |
| 5 | 623.250 | 626.500 | 625.250 | 621.300 | 626.975 | 628.900 | 629.500 | 628.700 | 626.775 |
| 6 | 625.250 | 627.500 | 626.500 | 632.775 | 629.300 | 630.100 | 636.700 | 636.000 | 636.000 |
| 7 | 635.500 | 643.750 | 631.750 | 636.900 | 638.100 | 633.500 | 637.100 | 637.500 | 637.500 |
| 8 | 644.250 | 646.750 | 634.500 | 644.500 | 645.700 | 640.025 | 645.500 | 644.700 | 648.975 |
| 9 | 647.500 | 650.500 | 635.500 | 650.225 | 649.500 | 644.900 | 648.225 | 645.100 | 650.775 |
| 10 | 649.250 | 652.250 | 647.250 | 652.900 | 652.500 | 658.225 | 652.000 | 650.775 | 653.100 |
| 11 | 650.500 | 659.250 | 649.250 | 658.975 | 658.975 | 662.100 | 658.775 | 660.000 | 653.900 |
| 12 | 655.750 | 663.750 | 657.750 | 662.100 | 662.500 | 662.500 | 661.100 | 663.000 | 661.100 |
| 13 | 663.500 | 665.250 | 659.250 | 665.500 | 664.025 | 664.025 | 661.900 | 664.225 | 664.975 |
| 14 | 665.750 | 665.750 | 663.750 | 618.225 | 614.100 | 618.975 | 663.000 | 664.975 | 616.975 |
| 15 | 616.500 | 614.750 | 614.750 | 624.775 | 616.025 | 622.500 | 614.300 | 618.025 | 628.000 |
| 16 | 620.250 | 616.500 | 616.500 | 626.225 | 622.500 | 625.500 | 624.225 | 624.975 | 628.700 |
| 17 | 624.500 | 619.750 | 624.500 | 628.900 | 626.225 | 629.300 | 630.300 | 628.000 | 629.900 |
| 18 | 626.500 | 624.500 | 627.250 | 629.700 | 629.700 | 634.975 | 647.000 | 632.225 | 630.300 |
| 19 | 627.500 | 625.250 | 628.250 | 632.025 | 632.025 | 642.975 | 650.775 | 634.025 | 632.225 |
| 20 | 639.750 | 635.500 | 643.500 | 637.300 | 648.775 | 645.300 | 652.700 | 638.300 | 637.100 |
| 21 | 641.250 | 636.250 | 646.750 | 642.975 | 652.900 | 650.225 | 656.225 | 640.225 | 656.225 |
| 22 | 641.750 | 643.250 | 648.500 | 653.700 | 654.500 | 652.900 | 658.025 | 648.975 | 661.500 |
| 23 | 643.250 | 647.500 | 650.500 | 654.100 | 660.500 | 653.300 | 662.300 | 658.775 | 662.300 |
| 24 | 649.750 | 648.500 | 655.750 | 656.775 | 661.300 | 656.025 | | | 664.225 |
| 25 | 651.500 | 655.500 | 657.250 | 658.225 | 664.775 | 658.975 | | | |
| 26 | 654.750 | 656.500 | 660.250 | 660.900 | | | | | |
| 27 | 656.500 | 658.500 | 664.500 | 661.700 | | | | | |
| 28 | 658.500 | 659.750 | 665.750 | 664.025 | | | | | |
| 29 | 662.750 | | | | | | | | |
| 30 | 664.500 | | | | | | | | |

| Channel | Group 21 | Group 22 | Group 23 | Group 24 | Group 25 | Group 26 |
|---|---|---|---|---|---|---|
| | European TV channel 39 optimized 614 - 622 MHz | European TV channel 40 optimized 622 - 630 MHz | European TV channel 41 optimized 630 - 638 MHz | European TV channel 42 optimized 638 - 646 MHz | European TV channel 43 optimized 646 - 654 MHz | European TV channel 44 optimized 654 - 660 MHz |
| 1 | 614.125 | 622.125 | 630.125 | 638.125 | 646.125 | 654.125 |
| 2 | 614.725 | 622.725 | 630.725 | 638.725 | 646.725 | 654.725 |
| 3 | 615.900 | 623.900 | 631.900 | 639.900 | 647.900 | 655.900 |
| 4 | 617.400 | 625.400 | 633.400 | 641.400 | 649.400 | 657.400 |
| 5 | 618.400 | 626.400 | 634.400 | 642.400 | 650.400 | 658.400 |
| 6 | 619.775 | 627.775 | 635.775 | 643.775 | 651.775 | 659.775 |
| 7 | 620.500 | 628.500 | 636.500 | 644.500 | 652.500 | 660.500 |
| 8 | 621.400 | 629.400 | 637.400 | 645.400 | 653.400 | 661.400 |
| 9 | 621.775 | 629.775 | 637.775 | 645.775 | 653.775 | 661.775 |
| 10 | 615.575 | 623.575 | 631.575 | 639.575 | 647.575 | 655.575 |

| Channel | Full Range max. # of comp. frequencies (option 1) | Full Range max. # of comp. frequencies (option 2) | France preferred: User Group A (option 1) | France preferred: User Group A (option 2) | France preferred: User Group B (option 1) | France preferred: User Group B (option 2) | France preferred: User Group C (option 1) | France preferred: User Group C (option 2) | All Bands | All Bands |
|---|---|---|---|---|---|---|---|---|---|---|
| | Group 1 | Group 2 | Group 3 | Group 4 | Group 5 | Group 6 | Group 7 | Group 8 | Group 9 | Group 10 |
| 1 | 638.100 | 638.900 | 639.500 | 639.500 | 640.775 | 638.500 | 640.225 | 639.000 | 647.625 | 639.350 |
| 2 | 638.825 | 639.625 | 640.500 | 640.500 | 642.225 | 640.775 | 640.975 | 640.225 | 654.200 | 642.325 |
| 3 | 639.350 | 640.150 | 641.250 | 641.750 | 645.300 | 645.300 | 642.025 | 640.975 | 657.200 | 643.850 |
| 4 | 640.375 | 641.175 | 641.750 | 643.250 | 646.100 | 650.225 | 644.700 | 642.025 | 657.600 | 644.325 |
| 5 | 641.725 | 642.525 | 643.250 | 643.750 | 648.025 | 650.975 | 646.300 | 644.700 | 658.750 | 647.875 |
| 6 | 642.350 | 643.150 | 646.750 | 647.250 | 650.975 | 652.900 | 653.100 | 652.700 | 663.050 | 649.975 |
| 7 | 645.150 | 645.950 | 651.500 | 655.500 | 660.500 | 654.100 | 653.500 | 653.100 | 664.050 | 650.575 |
| 8 | 650.250 | 651.050 | 655.500 | 657.250 | 660.900 | 654.500 | 656.975 | 660.000 | 664.775 | 662.275 |
| 9 | 650.675 | 651.475 | 667.250 | 665.750 | 662.100 | 658.225 | 661.100 | 662.300 | 668.025 | 663.450 |
| 10 | 652.750 | 653.550 | 672.500 | 671.750 | 668.500 | 670.500 | 666.025 | 668.700 | 675.025 | 672.575 |
| 11 | 654.625 | 655.425 | 673.750 | 672.500 | 672.775 | 678.100 | 666.775 | 669.500 | 679.725 | 673.300 |
| 12 | 663.475 | 664.275 | 679.250 | 675.250 | 680.025 | 680.775 | 680.225 | 680.975 | 680.600 | 680.925 |
| 13 | 664.700 | 665.500 | 679.750 | 676.250 | 681.500 | 682.975 | 682.025 | 685.900 | 684.200 | 684.100 |
| 14 | 667.325 | 668.125 | 681.250 | 682.500 | 690.975 | 684.900 | 685.500 | 687.000 | 688.025 | 687.500 |
| 15 | 668.775 | 669.575 | 683.750 | 684.250 | 692.900 | 686.500 | 688.225 | 692.700 | 688.475 | 688.000 |
| 16 | 669.700 | 670.500 | 687.500 | 687.500 | 694.100 | 692.900 | 692.000 | 693.900 | 689.650 | 689.650 |
| 17 | 673.450 | 674.250 | 692.250 | 691.750 | 694.500 | 693.700 | 692.700 | 694.300 | 693.700 | 691.500 |
| 18 | 676.275 | 677.075 | 695.500 | 695.750 | 696.775 | 696.025 | 693.100 | 696.225 | 694.250 | 692.325 |
| 19 | 681.050 | 681.850 | 696.500 | 697.250 | 697.500 | 697.500 | 693.900 | 696.975 | 695.700 | 693.750 |
| 20 | 682.600 | 683.400 | 697.250 | 697.750 | 638.100 | 638.100 | 696.975 | 650.775 | 697.425 | 697.500 |
| 21 | 684.700 | 685.500 | 638.750 | 641.250 | 648.775 | 644.900 | 652.000 | 656.225 | 648.425 | 655.425 |
| 22 | 691.450 | 692.250 | 647.250 | 647.750 | 650.225 | 648.775 | 658.025 | 663.000 | 662.400 | 659.025 |
| 23 | 694.450 | 695.250 | 649.250 | 648.500 | 661.700 | 657.500 | 658.775 | 664.975 | 690.350 | 679.925 |
| 24 | 695.300 | 696.100 | 649.750 | 657.750 | 666.225 | 666.975 | 668.000 | 672.225 | 644.000 | 657.950 |
| 25 | 695.700 | 696.500 | 650.500 | 658.500 | 666.975 | 669.300 | 680.975 | 682.775 | 649.875 | 661.400 |
| 26 | 696.650 | 697.450 | 660.250 | 662.750 | 669.300 | 670.100 | 684.700 | 685.100 | 659.300 | 676.450 |
| 27 | 697.150 | 697.950 | 662.750 | 663.500 | 669.700 | 672.775 | 685.900 | 686.300 | 682.950 | 694.300 |
| 28 | 643.850 | 644.650 | 664.500 | 665.250 | 682.225 | 684.500 | | | 692.425 | 696.875 |
| 29 | 668.300 | 669.100 | 666.500 | 667.500 | 685.700 | 692.500 | | | 640.750 | 646.000 |
| 30 | 692.750 | 693.550 | 671.500 | 671.250 | 686.100 | 694.100 | | | 642.900 | 658.600 |
| 31 | 649.350 | 650.150 | 674.500 | 674.500 | | | | | 644.825 | 659.875 |
| 32 | 653.950 | 654.750 | 684.250 | 688.500 | | | | | 677.625 | 670.900 |
| 33 | 657.925 | 658.725 | 689.750 | 689.250 | | | | | 679.325 | 675.275 |
| 34 | 681.950 | 682.750 | 691.750 | 691.250 | | | | | 697.950 | 676.975 |
| 35 | 685.525 | 686.325 | 697.750 | 695.250 | | | | | | |
| 36 | 686.575 | 687.375 | | | | | | | | |
| 37 | 690.775 | 691.575 | | | | | | | | |
| 38 | 655.750 | 656.550 | | | | | | | | |
| 39 | 671.700 | 672.500 | | | | | | | | |
| 40 | 689.425 | 690.225 | | | | | | | | |

# M5E FREQUENCY BAND (694–758 MHz)

| Channel | Group 1 | Group 2 | Group 3 | Group 4 | Group 5 | Group 6 | Group 7 | Group 8 | Group 9 | Group 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Full Range max. # of compatible frequencies 694 - 758 MHz (option 1) | Full Range max. # of compatible frequencies 694 - 758 MHz (option 2) | Full Range max. # of compatible frequencies 694 - 758 MHz (option 3) | Full Range max. # of compatible frequencies 694 - 758 MHz (option 4) | France preferred: User Group A 694 - 758 MHz (option 1) | France preferred: User Group A 694 - 758 MHz (option 2) | France preferred: User Group A 694 - 758 MHz (option 3) | France preferred: User Group B 694 - 758 MHz (option 1) | France preferred: User Group B 694 - 758 MHz (option 2) | France preferred: User Group B 694 - 758 MHz (option 3) |
| **1** | 694.400 | 694.950 | 698.025 | 694.350 | 694.750 | 697.250 | 695.500 | 696.025 | 697.500 | 696.025 |
| **2** | 695.175 | 696.000 | 699.375 | 695.075 | 699.250 | 698.500 | 702.750 | 696.775 | 701.700 | 698.225 |
| **3** | 696.400 | 698.625 | 701.125 | 695.550 | 704.500 | 699.500 | 704.500 | 698.225 | 702.500 | 700.900 |
| **4** | 696.925 | 700.825 | 702.225 | 696.575 | 707.250 | 708.250 | 707.750 | 705.500 | 706.975 | 705.500 |
| **5** | 699.025 | 702.775 | 703.075 | 700.275 | 715.500 | 713.250 | 716.250 | 720.025 | 722.975 | 708.500 |
| **6** | 700.550 | 703.575 | 705.450 | 701.675 | 716.250 | 719.500 | 721.750 | 722.975 | 724.500 | 708.900 |
| **7** | 703.425 | 707.375 | 707.575 | 703.800 | 722.500 | 727.500 | 722.500 | 725.300 | 734.500 | 714.225 |
| **8** | 704.500 | 708.825 | 714.625 | 707.025 | 728.500 | 735.250 | 723.750 | 732.900 | 738.225 | 718.100 |
| **9** | 708.225 | 710.900 | 718.650 | 708.700 | 735.750 | 737.750 | 739.500 | 738.975 | 740.900 | 729.500 |
| **10** | 711.375 | 717.350 | 720.500 | 709.600 | 737.250 | 739.250 | 743.750 | 740.900 | 746.975 | 734.500 |
| **11** | 715.625 | 719.200 | 721.175 | 711.625 | 747.750 | 739.750 | 746.500 | 742.100 | 748.900 | 736.025 |
| **12** | 717.050 | 720.400 | 722.150 | 715.050 | 750.750 | 744.500 | 747.500 | 745.500 | 749.300 | 740.500 |
| **13** | 727.050 | 720.750 | 729.925 | 729.275 | 751.250 | 745.250 | 753.250 | 750.500 | 752.775 | 754.975 |
| **14** | 730.500 | 722.050 | 735.550 | 733.100 | 753.250 | 748.250 | 755.750 | 757.300 | 698.225 | 757.300 |
| **15** | 731.125 | 734.725 | 735.925 | 734.425 | 754.500 | 751.750 | 756.250 | 701.300 | 700.500 | 697.500 |
| **16** | 740.875 | 739.825 | 740.700 | 734.900 | 755.500 | 694.750 | 694.750 | 702.500 | 701.300 | 709.700 |
| **17** | 741.750 | 740.875 | 744.850 | 741.675 | 695.500 | 695.500 | 696.500 | 704.775 | 704.025 | 716.500 |
| **18** | 746.675 | 745.375 | 747.850 | 744.600 | 696.500 | 696.500 | 699.500 | 710.500 | 708.900 | 728.775 |
| **19** | 748.725 | 748.525 | 751.700 | 746.075 | 698.500 | 697.750 | 711.500 | 712.025 | 709.300 | 734.100 |
| **20** | 749.150 | 751.875 | 752.425 | 747.025 | 700.250 | 700.250 | 713.750 | 716.500 | 710.100 | 738.975 |
| **21** | 750.375 | 752.650 | 753.375 | 748.225 | 702.750 | 706.500 | 714.500 | 716.900 | 712.025 | 741.300 |
| **22** | 753.550 | 753.900 | 753.950 | 750.950 | 703.500 | 707.750 | 715.500 | 718.100 | 730.225 | 741.700 |
| **23** | 755.400 | 754.250 | 754.800 | 751.575 | 711.250 | 711.250 | 720.500 | 726.100 | 733.300 | 744.025 |
| **24** | 755.925 | 755.650 | 755.275 | 753.475 | 719.500 | 713.750 | 727.750 | 730.225 | 733.700 | 749.700 |
| **25** | 756.900 | 757.850 | 757.425 | 755.100 | 720.500 | 715.500 | 732.250 | 733.300 | 740.500 | 754.225 |
| **26** | 699.625 | 695.325 | 694.275 | 697.000 | 721.750 | 722.500 | 740.250 | 736.025 | 742.500 | 756.900 |
| **27** | 714.775 | 699.975 | 695.300 | 697.825 | 730.500 | 728.500 | 743.250 | 746.975 | 750.100 | |
| **28** | 717.775 | 726.375 | 695.975 | 713.975 | 731.500 | 730.500 | 745.250 | 753.500 | 754.225 | |
| **29** | 721.050 | 735.600 | 706.025 | 722.450 | 739.500 | 732.250 | 745.750 | 754.225 | 754.975 | |
| **30** | 728.550 | 740.225 | 709.375 | 730.425 | 740.250 | 734.750 | 751.500 | 756.900 | | |
| **31** | 743.650 | 743.475 | 730.825 | 737.900 | 742.750 | 742.750 | 752.500 | | | |
| **32** | 747.450 | 746.550 | 755.950 | 756.525 | 747.250 | 747.500 | 753.750 | | | |
| **33** | 698.175 | 697.800 | 697.100 | 699.250 | 756.250 | 752.500 | | | | |
| **34** | 702.675 | 705.175 | 704.700 | 699.850 | | | | | | |
| **35** | 705.300 | 706.525 | 715.375 | 707.975 | | | | | | |
| **36** | 707.525 | 709.775 | 716.300 | 716.500 | | | | | | |
| **37** | 713.275 | 713.375 | 723.450 | 717.300 | | | | | | |
| **38** | 718.825 | 713.725 | 726.775 | 717.750 | | | | | | |
| **39** | 720.300 | 718.425 | 727.425 | 720.200 | | | | | | |
| **40** | 725.275 | 722.575 | 729.400 | 721.825 | | | | | | |
| **41** | 727.525 | 725.250 | 733.275 | 727.950 | | | | | | |
| **42** | 732.175 | 728.925 | 733.950 | 728.950 | | | | | | |
| **43** | 734.550 | 734.075 | 736.900 | 732.225 | | | | | | |
| **44** | 735.475 | 736.000 | 741.500 | 733.675 | | | | | | |
| **45** | 736.625 | 737.625 | 742.650 | 749.200 | | | | | | |
| **46** | 740.225 | 742.450 | 743.500 | 753.125 | | | | | | |
| **47** | 754.325 | 743.825 | 746.775 | 754.475 | | | | | | |
| **48** | 756.275 | 756.375 | 750.275 | 757.550 | | | | | | |

| Channel | Group 11<br>France preferred: User Group C 694 - 758 MHz (option 1) | Group 12<br>France preferred: User Group C 694 - 758 MHz (option 2) | Group 13<br>France preferred: User Group C 694 - 758 MHz (option 3) | Group 14<br>European TV channel 49 optimized 694 - 702 MHz | Group 15<br>European TV channel 50 optimized 702 - 710 MHz | Group 16<br>European TV channel 51 optimized 710 - 718 MHz | Group 17<br>European TV channel 52 optimized 718 - 726 MHz | Group 18<br>European TV channel 53 optimized 726 - 734 MHz | Group 19<br>European TV channel 54 optimized 734 - 742 MHz |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 694.300 | 698.025 | 694.300 | 694.350 | 702.350 | 710.350 | 718.350 | 726.350 | 734.350 |
| 2 | 695.000 | 700.700 | 701.900 | 694.700 | 702.700 | 710.700 | 718.700 | 726.700 | 734.700 |
| 3 | 712.975 | 703.000 | 706.025 | 695.375 | 703.375 | 711.375 | 719.375 | 727.375 | 735.375 |
| 4 | 714.775 | 704.975 | 708.000 | 696.700 | 704.700 | 712.700 | 720.700 | 728.700 | 736.700 |
| 5 | 719.000 | 709.500 | 711.000 | 697.175 | 705.175 | 713.175 | 721.175 | 729.175 | 737.175 |
| 6 | 722.775 | 710.300 | 712.225 | 698.400 | 706.400 | 714.400 | 722.400 | 730.400 | 738.400 |
| 7 | 724.700 | 728.225 | 727.000 | 699.825 | 707.825 | 715.825 | 723.825 | 731.825 | 739.825 |
| 8 | 725.900 | 732.000 | 732.700 | 700.600 | 708.600 | 716.600 | 724.600 | 732.600 | 740.600 |
| 9 | 736.225 | 733.100 | 733.500 | 701.725 | 709.725 | 717.725 | 725.725 | 733.725 | 741.725 |
| 10 | 741.100 | 740.700 | 738.025 | 701.050 | 709.050 | 717.050 | 725.050 | 733.050 | 741.050 |
| 11 | 744.975 | 742.300 | 746.775 | | | | | | |
| 12 | 749.500 | 754.025 | 749.900 | | | | | | |
| 13 | 750.300 | 757.100 | 750.300 | | | | | | |
| 14 | 757.100 | 757.500 | 756.700 | | | | | | |
| 15 | 698.025 | 695.000 | 696.225 | | | | | | |
| 16 | 704.225 | 696.225 | 698.775 | | | | | | |
| 17 | 706.025 | 698.775 | 700.000 | | | | | | |
| 18 | 708.000 | 706.025 | 700.700 | | | | | | |
| 19 | 708.700 | 714.775 | 702.300 | | | | | | |
| 20 | 711.000 | 722.025 | 712.975 | | | | | | |
| 21 | 717.500 | 732.700 | 714.775 | | | | | | |
| 22 | 733.100 | 735.000 | 720.975 | | | | | | |
| 23 | 742.300 | 736.225 | 724.700 | | | | | | |
| 24 | 744.225 | 738.775 | 735.000 | | | | | | |
| 25 | 746.775 | 740.000 | 736.225 | | | | | | |
| 25 | 748.000 | 752.225 | 744.975 | | | | | | |
| 27 | 752.975 | 752.975 | 751.000 | | | | | | |
| 28 | 756.000 | 754.775 | | | | | | | |

| Channel | Group 20<br>European TV channel 55 optimized 742 - 750 MHz | Group 21<br>European TV channel 56 optimized 750 - 758 MHz | Group 22<br>Combined UHF-R M5E, -Q5 and -R9: max. # of compatible frequencies (option 1) | Group 23<br>Combined UHF-R M5E, -Q5 and -R9: max. # of compatible frequencies (option 2) | Group 24<br>Belgium preferred: "VRT" TV ch. 51+ 54 710 - 718 MHz + 734 - 742 MHz |
|---|---|---|---|---|---|
| 1 | 742.350 | 750.350 | 694.400 | 694.675 | 710.825 |
| 2 | 742.700 | 750.700 | 695.450 | 695.775 | 711.525 |
| 3 | 743.375 | 751.375 | 695.875 | 696.300 | 712.675 |
| 4 | 744.700 | 752.700 | 697.150 | 697.225 | 715.650 |
| 5 | 745.175 | 753.175 | 697.550 | 698.975 | 716.125 |
| 6 | 746.400 | 754.400 | 698.600 | 699.350 | 717.025 |
| 7 | 747.825 | 755.825 | 699.425 | 700.900 | 717.400 |
| 8 | 748.600 | 756.600 | 701.500 | 701.225 | 735.175 |
| 9 | 749.725 | 757.725 | 702.025 | 701.950 | 737.175 |
| 10 | 749.050 | 757.050 | 702.350 | 703.700 | 737.775 |
| 11 | | | 703.775 | 704.225 | 738.825 |
| 12 | | | 704.800 | 706.875 | 740.950 |
| 13 | | | 706.300 | 708.700 | 741.650 |
| 14 | | | 711.500 | 710.900 | 713.100 |
| 15 | | | 713.450 | 713.475 | 734.850 |
| 16 | | | 714.700 | 713.950 | 735.700 |
| 17 | | | 716.425 | 715.200 | 711.850 |
| 18 | | | 718.700 | 715.750 | 716.425 |
| 19 | | | 719.000 | 716.750 | 738.150 |
| 20 | | | 719.750 | 717.275 | 740.075 |
| 21 | | | 720.050 | 721.475 | |
| 22 | | | 722.275 | 722.225 | |
| 23 | | | 724.275 | 723.900 | |
| 24 | | | 725.125 | 727.450 | |
| 25 | | | 726.875 | 730.700 | |
| 26 | | | 727.250 | 731.375 | |
| 27 | | | 728.300 | 731.800 | |
| 28 | | | 729.050 | 734.650 | |
| 29 | | | 732.525 | 735.525 | |
| 30 | | | 733.275 | 736.600 | |
| 31 | | | 737.150 | 737.225 | |
| 32 | | | 738.750 | | |

# P8 FREQUENCY BAND (710–790 MHz)

| Channel | Group 1 "Full Range max. # of compatible frequencies 710 - 790 MHz (option 1)" | Group 2 "Full Range max. # of compatible frequencies 710 - 790 MHz (option 2)" | Group 3 "Full Range max. # of compatible frequencies 710 - 790 MHz (option 3)" | Group 4 "Full Range max. # of compatible frequencies 710 - 790 MHz (option 4)" | Group 5 "France preferred: User Group A (option 1) 710 - 790 MHz" | Group 6 "France preferred: User Group A (option 2) 710 - 790 MHz" | Group 7 "France preferred: User Group A (option 3) 710 - 790 MHz" | Group 8 "France preferred: User Group B (option 1) 710 - 790 MHz" | Group 9 "France preferred: User Group B (option 2) 710 - 790 MHz" | Group 10 "France preferred: User Group B (option 3) 710 - 790 MHz" | Group 11 "France preferred: User Group C (option 1) 710 - 790 MHz" | Group 12 "France preferred: User Group C (option 2) 710 - 790 MHz" | Group 13 "France preferred: User Group C (option 3) 710 - 790 MHz" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 710.450 | 710.425 | 710.800 | 710.125 | 710.750 | 710.750 | 710.750 | 712.025 | 710.500 | 712.025 | 710.300 | 711.000 | 710.300 |
| **2** | 710.950 | 711.025 | 711.475 | 710.800 | 711.500 | 711.250 | 711.750 | 712.775 | 712.775 | 714.225 | 711.000 | 712.225 | 712.225 |
| **3** | 711.825 | 712.100 | 711.975 | 711.925 | 712.500 | 713.250 | 713.250 | 714.975 | 713.500 | 714.975 | 712.225 | 712.975 | 712.975 |
| **4** | 712.150 | 712.975 | 712.950 | 712.300 | 713.750 | 714.500 | 713.750 | 716.500 | 716.900 | 716.900 | 712.975 | 714.025 | 714.775 |
| **5** | 713.025 | 713.450 | 714.250 | 713.550 | 714.500 | 715.500 | 714.500 | 716.900 | 718.100 | 717.300 | 716.700 | 714.775 | 716.000 |
| **6** | 714.825 | 714.325 | 715.975 | 714.150 | 715.500 | 716.250 | 715.500 | 717.700 | 720.025 | 718.100 | 720.225 | 717.900 | 717.900 |
| **7** | 715.775 | 716.200 | 716.800 | 714.975 | 716.250 | 718.750 | 716.250 | 720.025 | 722.225 | 720.025 | 722.025 | 718.300 | 718.300 |
| **8** | 716.375 | 716.925 | 717.225 | 715.600 | 719.250 | 719.500 | 719.500 | 725.700 | 722.975 | 720.775 | 722.775 | 720.225 | 720.225 |
| **9** | 717.250 | 717.425 | 717.950 | 716.575 | 719.750 | 720.500 | 721.250 | 726.100 | 724.900 | 722.225 | 725.100 | 725.100 | 724.000 |
| **10** | 718.300 | 719.150 | 719.750 | 717.275 | 721.250 | 722.500 | 722.500 | 728.775 | 725.300 | 724.900 | 725.900 | 725.900 | 724.700 |
| **11** | 719.975 | 719.725 | 723.175 | 720.225 | 726.750 | 723.250 | 724.250 | 730.225 | 726.100 | 725.300 | 726.300 | 727.000 | 725.100 |
| **12** | 720.400 | 721.100 | 724.175 | 720.675 | 729.250 | 723.750 | 726.750 | 730.975 | 728.025 | 728.775 | 727.000 | 730.775 | 725.900 |
| **13** | 721.275 | 725.725 | 725.525 | 721.450 | 729.750 | 727.500 | 727.750 | 732.900 | 728.775 | 730.975 | 730.775 | 732.700 | 728.975 |
| **14** | 721.975 | 726.750 | 726.075 | 721.925 | 730.500 | 728.500 | 729.750 | 734.100 | 730.225 | 734.100 | 734.300 | 733.100 | 730.775 |
| **15** | 722.900 | 727.600 | 727.350 | 722.850 | 731.500 | 729.250 | 731.500 | 736.025 | 738.975 | 734.500 | 736.225 | 734.300 | 736.225 |
| **16** | 723.375 | 728.150 | 729.750 | 723.425 | 734.750 | 732.250 | 735.500 | 736.775 | 740.900 | 736.025 | 736.975 | 735.000 | 738.025 |
| **17** | 726.525 | 729.800 | 731.900 | 725.200 | 735.750 | 735.750 | 736.500 | 738.225 | 741.300 | 738.225 | 740.000 | 738.025 | 738.775 |
| **18** | 734.150 | 730.925 | 732.850 | 725.950 | 736.500 | 737.250 | 737.750 | 741.300 | 742.100 | 740.900 | 740.700 | 738.775 | 740.700 |
| **19** | 735.150 | 732.600 | 734.700 | 734.075 | 737.750 | 737.750 | 738.500 | 748.900 | 744.025 | 741.700 | 741.100 | 740.000 | 741.100 |
| **20** | 737.050 | 733.225 | 737.175 | 734.375 | 738.500 | 738.500 | 739.750 | 749.300 | 744.775 | 744.775 | 741.900 | 740.700 | 741.900 |
| **21** | 737.650 | 733.525 | 739.125 | 735.600 | 739.500 | 742.750 | 742.750 | 750.100 | 746.225 | 746.975 | 749.900 | 742.300 | 742.300 |
| **22** | 738.025 | 734.900 | 741.300 | 735.900 | 743.500 | 743.500 | 743.750 | 752.025 | 746.975 | 752.025 | 750.300 | 746.025 | 749.500 |
| **23** | 738.600 | 735.725 | 741.725 | 737.925 | 745.250 | 744.500 | 744.500 | 752.775 | 748.900 | 752.775 | 752.225 | 748.000 | 751.000 |
| **24** | 739.375 | 736.850 | 742.700 | 738.850 | 748.250 | 746.500 | 747.500 | 754.225 | 749.700 | 754.225 | 754.775 | 751.000 | 752.225 |
| **25** | 739.775 | 741.950 | 745.050 | 739.600 | 750.750 | 747.250 | 750.750 | 754.975 | 750.100 | 756.900 | 757.100 | 752.225 | 754.025 |
| **26** | 740.350 | 744.425 | 746.050 | 740.675 | 751.750 | 750.750 | 753.250 | 756.900 | 754.225 | 757.300 | 758.300 | 754.775 | 754.775 |
| **27** | 742.850 | 746.425 | 747.225 | 741.100 | 752.500 | 751.500 | 754.500 | 758.100 | 757.700 | 758.100 | 760.225 | 756.700 | 756.000 |
| **28** | 743.350 | 747.400 | 747.650 | 744.075 | 753.750 | 752.500 | 755.500 | 762.225 | 760.775 | 760.025 | 760.975 | 759.000 | 759.000 |
| **29** | 752.850 | 749.175 | 749.025 | 748.775 | 754.500 | 753.750 | 756.250 | 762.975 | 762.975 | 764.900 | 762.775 | 760.225 | 762.775 |
| **30** | 753.200 | 749.900 | 750.000 | 749.725 | 759.500 | 755.500 | 760.500 | 765.300 | 766.100 | 765.300 | 765.100 | 760.975 | 768.225 |
| **31** | 753.975 | 751.650 | 751.325 | 750.450 | 760.500 | 756.250 | 761.250 | 765.700 | 768.025 | 766.100 | 765.900 | 764.000 | 768.975 |
| **32** | 755.900 | 752.675 | 752.175 | 750.975 | 761.250 | 759.250 | 762.500 | 768.025 | 768.775 | 766.500 | 767.000 | 764.700 | 770.025 |
| **33** | 756.375 | 754.525 | 753.325 | 751.700 | 762.500 | 759.750 | 763.250 | 768.775 | 770.225 | 768.775 | 772.700 | 766.300 | 772.000 |
| **34** | 757.125 | 755.000 | 754.175 | 752.750 | 763.500 | 761.250 | 764.250 | 772.900 | 770.975 | 778.225 | 774.300 | 770.775 | 772.700 |
| **35** | 757.500 | 756.625 | 755.700 | 754.250 | 764.250 | 762.500 | 766.750 | 774.100 | 772.900 | 778.975 | 775.000 | 772.000 | 774.300 |
| **36** | 759.275 | 757.675 | 757.900 | 754.800 | 766.750 | 763.500 | 768.500 | 776.025 | 780.500 | 780.900 | 776.225 | 773.900 | 778.025 |
| **37** | 760.100 | 758.525 | 758.525 | 755.575 | 767.750 | 766.750 | 769.750 | 778.225 | 780.900 | 781.300 | 778.775 | 775.000 | 778.775 |
| **38** | 760.500 | 759.575 | 760.375 | 756.125 | 769.750 | 769.250 | 771.250 | 778.975 | 781.700 | 782.100 | 780.000 | 778.775 | 780.000 |
| **39** | 761.975 | 761.825 | 761.825 | 757.275 | 775.750 | 769.750 | 774.750 | 780.900 | 782.100 | 782.500 | 780.700 | 781.100 | 780.700 |
| **40** | 763.250 | 762.250 | 764.650 | 757.700 | 776.500 | 770.500 | 775.500 | 781.700 | 784.025 | 786.225 | 781.900 | 781.900 | 782.300 |
| **41** | 764.075 | 763.175 | 766.050 | 767.325 | 778.500 | 774.750 | 777.750 | 782.100 | 786.975 | 786.975 | 782.300 | 784.225 | 783.000 |
| **42** | 768.425 | 768.450 | 768.750 | 767.750 | 779.500 | 775.250 | 778.500 | 784.775 | 788.500 | 788.500 | 786.025 | 788.000 | 784.225 |
| **43** | 769.725 | 770.450 | 769.150 | 768.850 | 780.250 | 777.750 | 779.500 | 785.500 | 789.300 | 788.900 | 788.000 | 789.100 | 786.775 |
| **44** | 770.300 | 771.525 | 770.575 | 769.775 | 782.750 | 779.500 | 780.250 | 786.975 | 789.700 | 789.700 | 789.100 | 789.500 | 789.100 |
| **45** | 771.575 | 773.100 | 771.125 | 771.100 | 783.500 | 783.500 | 783.250 | 789.700 | | | | | |
| **46** | 771.975 | 773.450 | 772.650 | 771.625 | 784.500 | 784.500 | 783.750 | | | | | | |
| **47** | 773.950 | 774.400 | 774.375 | 772.650 | 785.750 | 785.250 | 784.500 | | | | | | |
| **48** | 775.125 | 774.900 | 775.425 | 773.025 | 786.500 | 786.500 | 786.500 | | | | | | |
| **49** | 775.750 | 776.050 | 776.950 | 773.975 | 787.750 | 787.250 | 787.500 | | | | | | |
| **50** | 777.050 | 776.875 | 777.300 | 775.725 | 788.250 | 788.250 | 788.250 | | | | | | |
| **51** | 778.000 | 777.500 | 781.075 | 780.950 | | | | | | | | | |
| **52** | 782.875 | 777.950 | 781.475 | 782.275 | | | | | | | | | |
| **53** | 783.275 | 784.200 | 782.450 | 782.900 | | | | | | | | | |
| **54** | 784.200 | 784.875 | 783.150 | 783.200 | | | | | | | | | |
| **55** | 784.850 | 785.925 | 783.650 | 783.875 | | | | | | | | | |
| **56** | 787.200 | 786.375 | 784.475 | 785.125 | | | | | | | | | |
| **57** | 787.975 | 787.250 | 786.975 | 785.950 | | | | | | | | | |
| **58** | 788.375 | 788.350 | 787.300 | 787.700 | | | | | | | | | |
| **59** | 788.975 | 788.925 | 788.175 | 788.225 | | | | | | | | | |
| **60** | 789.275 | 789.250 | 788.800 | 788.525 | | | | | | | | | |

| Channel | Group 14 "Germany preferred: Full Range w/o TV Ch. 52 710 - 718 MHz + 726 - 790 MHz" | Group 15 "Germany preferred: Full Range w/o TV Ch. 53 710 - 726 MHz + 734 - 790 MHz" | Group 16 "Germany preferred: Full Range w/o TV Ch. 54 710 - 734 MHz + 742 - 790 MHz" | Group 17 "Germany preferred: Full Range w/o TV Ch. 55 710 - 742 MHz + 750 - 790 MHz" | Group 18 "Germany preferred: Full Range w/o TV Ch. 56 710 - 750 MHz + 758 - 790 MHz" | Group 19 "Germany preferred: Full Range w/o TV Ch. 57 710 - 758 MHz + 766 - 790 MHz" | Group 20 "Germany preferred: Full Range w/o TV Ch. 58 710 - 766 MHz + 774 - 790 MHz" | Group 21 "Germany preferred: Full Range w/o TV Ch. 59 710 - 774 MHz + 782 - 790 MHz" | Group 22 "Germany preferred: Full Range w/o TV Ch. 60 710 - 782 MHz" | Group 23 "Germany preferred: Full Range w/o TV Ch. 53, 57 710 - 726 MHz + 734 - 758 MHz + 766 - 790 MHz" | Group 24 "Germany preferred: Full Range w/o TV Ch. 56, 59 710 - 750 MHz + 758 - 774 MHz + 782 - 790 MHz" | Group 25 "Germany preferred: Full Range w/o TV Ch. 52, 55, 57 710 - 718 MHz + 726 - 742 MHz + 750 - 758 MHz + 766 - 790 MHz" | Group 26 "Germany preferred: Full Range w/o TV Ch. 52, 55, 60 710 - 718 MHz + 726 - 742 MHz + 750 - 782 MHz" |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 710.200 | 710.200 | 710.350 | 710.350 | 710.575 | 710.275 | 710.600 | 710.200 | 710.750 | 710.675 | 710.225 | 710.425 | 710.375 |
| 2 | 710.700 | 710.575 | 710.725 | 711.700 | 711.425 | 710.900 | 711.775 | 711.125 | 711.275 | 712.075 | 710.600 | 710.875 | 710.800 |
| 3 | 711.400 | 711.975 | 711.450 | 713.250 | 712.075 | 711.950 | 712.200 | 711.725 | 712.000 | 713.275 | 711.325 | 711.650 | 711.550 |
| 4 | 711.725 | 712.475 | 711.975 | 713.700 | 712.450 | 712.750 | 713.375 | 712.500 | 713.550 | 714.650 | 711.875 | 712.675 | 712.125 |
| 5 | 712.275 | 713.200 | 714.575 | 714.625 | 713.175 | 713.925 | 714.175 | 713.625 | 714.300 | 715.225 | 712.225 | 713.100 | 712.525 |
| 6 | 714.900 | 713.575 | 715.275 | 715.000 | 714.725 | 714.375 | 715.300 | 714.325 | 715.500 | 715.625 | 712.750 | 714.225 | 713.200 |
| 7 | 715.450 | 714.125 | 715.625 | 716.500 | 716.775 | 715.725 | 716.875 | 716.350 | 718.100 | 716.350 | 715.100 | 715.550 | 714.050 |
| 8 | 715.825 | 715.600 | 716.475 | 717.275 | 717.775 | 716.400 | 717.575 | 718.800 | 718.425 | 716.900 | 715.800 | 716.075 | 715.275 |
| 9 | 716.475 | 716.000 | 717.000 | 718.675 | 718.600 | 718.175 | 719.250 | 719.425 | 719.225 | 718.800 | 716.300 | 717.050 | 716.250 |
| 10 | 717.325 | 720.200 | 717.900 | 720.325 | 720.150 | 721.350 | 720.175 | 720.375 | 721.075 | 719.950 | 716.975 | 717.400 | 717.000 |
| 11 | 717.850 | 721.175 | 722.950 | 721.125 | 720.625 | 721.700 | 721.375 | 720.775 | 721.725 | 720.250 | 723.025 | 726.925 | 717.525 |
| 12 | 727.975 | 721.975 | 724.900 | 723.825 | 721.275 | 722.225 | 722.150 | 723.100 | 723.475 | 720.900 | 724.175 | 727.675 | 726.175 |
| 13 | 728.750 | 722.450 | 725.750 | 724.400 | 725.300 | 722.925 | 723.925 | 723.525 | 724.450 | 722.200 | 724.850 | 728.125 | 727.050 |
| 14 | 729.225 | 723.175 | 726.350 | 725.475 | 726.275 | 723.850 | 724.775 | 724.200 | 726.950 | 722.650 | 726.175 | 728.800 | 727.525 |
| 15 | 729.900 | 723.550 | 727.175 | 729.575 | 727.550 | 724.950 | 725.350 | 724.700 | 727.475 | 723.300 | 727.075 | 729.650 | 728.225 |
| 16 | 730.250 | 724.150 | 727.475 | 730.925 | 728.625 | 726.525 | 728.375 | 726.050 | 728.350 | 723.775 | 728.425 | 730.300 | 730.050 |
| 17 | 730.775 | 725.350 | 728.200 | 731.325 | 731.575 | 727.250 | 728.800 | 726.950 | 731.075 | 734.850 | 728.850 | 731.450 | 730.450 |
| 18 | 733.100 | 725.650 | 730.450 | 732.075 | 732.225 | 729.775 | 729.950 | 729.400 | 731.650 | 735.900 | 729.525 | 732.125 | 731.175 |
| 19 | 734.175 | 734.925 | 730.975 | 732.475 | 733.275 | 734.350 | 730.750 | 732.275 | 732.000 | 736.475 | 730.450 | 735.800 | 731.500 |
| 20 | 734.725 | 736.075 | 732.200 | 733.425 | 733.575 | 735.150 | 731.775 | 736.375 | 733.625 | 737.275 | 731.725 | 737.100 | 732.075 |
| 21 | 737.275 | 736.875 | 732.525 | 736.125 | 734.150 | 738.475 | 733.425 | 736.725 | 734.050 | 738.300 | 732.300 | 737.500 | 734.500 |
| 22 | 737.825 | 738.600 | 733.025 | 736.575 | 735.275 | 739.125 | 734.025 | 737.325 | 737.300 | 739.025 | 734.375 | 738.125 | 735.050 |
| 23 | 738.950 | 739.150 | 742.700 | 738.450 | 742.350 | 739.950 | 737.075 | 738.750 | 737.875 | 740.300 | 741.375 | 740.725 | 736.375 |
| 24 | 741.750 | 739.950 | 743.325 | 739.000 | 743.525 | 740.350 | 740.300 | 739.550 | 740.100 | 740.975 | 742.025 | 741.075 | 737.275 |
| 25 | 742.375 | 740.950 | 744.525 | 739.300 | 744.075 | 741.975 | 745.050 | 742.000 | 743.175 | 741.300 | 743.025 | 741.700 | 739.250 |
| 26 | 744.075 | 741.650 | 744.850 | 739.975 | 744.925 | 742.775 | 746.275 | 743.050 | 744.300 | 741.950 | 743.550 | 750.200 | 740.500 |
| 27 | 748.450 | 742.550 | 745.525 | 750.850 | 745.575 | 744.525 | 746.925 | 745.050 | 745.950 | 743.875 | 745.250 | 750.500 | 740.950 |
| 28 | 748.950 | 745.325 | 748.050 | 752.025 | 746.500 | 746.750 | 747.825 | 746.250 | 747.950 | 749.725 | 746.075 | 750.975 | 751.275 |
| 29 | 751.200 | 748.650 | 748.700 | 752.900 | 746.800 | 747.650 | 748.125 | 748.275 | 749.475 | 750.200 | 746.550 | 752.125 | 752.025 |
| 30 | 751.900 | 749.450 | 749.100 | 753.525 | 748.425 | 748.275 | 749.600 | 752.125 | 750.250 | 750.925 | 747.225 | 754.525 | 752.550 |
| 31 | 752.300 | 749.950 | 749.975 | 753.975 | 749.175 | 751.700 | 750.900 | 754.325 | 750.550 | 752.500 | 748.100 | 755.050 | 753.475 |
| 32 | 753.075 | 751.050 | 750.325 | 754.775 | 749.750 | 752.225 | 752.550 | 754.750 | 752.125 | 753.275 | 748.775 | 755.400 | 754.225 |
| 33 | 755.925 | 751.725 | 752.200 | 755.325 | 758.600 | 752.925 | 753.250 | 755.350 | 753.400 | 753.575 | 749.850 | 756.450 | 755.350 |
| 34 | 756.375 | 752.850 | 758.475 | 756.875 | 759.025 | 756.000 | 755.775 | 756.750 | 755.475 | 754.975 | 758.525 | 756.750 | 756.975 |
| 35 | 757.000 | 753.250 | 759.275 | 758.175 | 759.975 | 756.425 | 756.300 | 757.575 | 755.975 | 755.850 | 758.950 | 757.325 | 757.850 |
| 36 | 759.325 | 754.275 | 761.450 | 759.200 | 760.425 | 757.150 | 757.475 | 759.500 | 757.100 | 757.200 | 759.750 | 757.675 | 758.425 |
| 37 | 760.275 | 754.975 | 762.300 | 760.025 | 761.100 | 766.450 | 757.850 | 761.025 | 759.050 | 757.700 | 761.275 | 766.525 | 760.050 |
| 38 | 761.875 | 756.075 | 763.350 | 760.500 | 762.025 | 766.950 | 759.750 | 762.000 | 759.575 | 766.625 | 763.075 | 767.175 | 760.875 |
| 39 | 765.275 | 757.675 | 764.075 | 761.225 | 762.425 | 767.250 | 760.400 | 764.850 | 761.875 | 767.200 | 764.300 | 767.525 | 762.425 |
| 40 | 766.175 | 758.425 | 765.050 | 762.125 | 763.425 | 767.750 | 761.225 | 765.850 | 762.825 | 767.525 | 764.700 | 768.325 | 766.800 |
| 41 | 766.525 | 761.475 | 765.650 | 768.650 | 765.275 | 768.725 | 762.225 | 766.200 | 763.375 | 768.725 | 766.575 | 769.825 | 767.275 |
| 42 | 768.475 | 766.375 | 767.625 | 769.850 | 766.675 | 769.275 | 764.225 | 767.050 | 765.350 | 769.025 | 766.950 | 770.375 | 768.550 |
| 43 | 768.975 | 767.700 | 770.025 | 772.425 | 767.650 | 771.800 | 774.150 | 768.075 | 766.825 | 771.700 | 767.850 | 771.575 | 770.050 |
| 44 | 770.950 | 769.275 | 771.425 | 773.775 | 773.750 | 772.525 | 774.675 | 769.475 | 769.350 | 772.200 | 769.425 | 771.950 | 770.875 |
| 45 | 772.275 | 771.050 | 773.250 | 774.150 | 775.500 | 773.075 | 775.475 | 771.100 | 770.550 | 772.875 | 770.275 | 773.875 | 771.950 |
| 46 | 773.250 | 771.525 | 774.100 | 774.725 | 776.050 | 773.425 | 776.625 | 771.600 | 772.550 | 773.225 | 771.700 | 774.625 | 772.500 |
| 47 | 774.425 | 772.475 | 775.500 | 775.500 | 777.625 | 774.075 | 777.525 | 772.375 | 772.950 | 773.750 | 772.450 | 775.150 | 774.300 |
| 48 | 774.825 | 774.100 | 776.300 | 776.475 | 778.750 | 774.550 | 779.350 | 773.375 | 773.900 | 780.650 | 772.950 | 781.550 | 775.925 |
| 49 | 779.025 | 774.775 | 777.550 | 779.375 | 779.450 | 775.450 | 780.200 | 773.900 | 775.550 | 781.225 | 773.800 | 782.325 | 777.275 |
| 50 | 779.525 | 776.225 | 779.075 | 780.050 | 780.475 | 780.675 | 780.675 | 782.425 | 776.050 | 782.075 | 782.450 | 783.975 | 777.925 |
| 51 | 781.800 | 777.500 | 779.775 | 782.025 | 781.800 | 782.475 | 781.375 | 783.300 | 776.375 | 782.400 | 783.075 | 784.950 | 779.025 |
| 52 | 782.925 | 782.975 | 780.100 | 782.925 | 782.675 | 782.825 | 781.700 | 783.925 | 777.500 | 783.125 | 784.900 | 785.425 | 779.625 |
| 53 | 783.825 | 783.775 | 782.200 | 783.450 | 784.675 | 783.375 | 782.350 | 784.975 | 777.900 | 784.625 | 785.350 | 786.175 | 780.525 |
| 54 | 785.300 | 785.150 | 785.625 | 786.675 | 786.375 | 784.650 | 784.325 | 786.325 | 780.000 | 785.375 | 786.525 | 786.675 | 781.150 |
| 55 | 786.025 | 785.475 | 787.175 | 787.225 | 787.025 | 785.350 | 786.475 | 786.950 | 780.775 | 785.775 | 787.075 | 788.125 | |
| 56 | 786.500 | 786.975 | 787.925 | 788.075 | 787.375 | 785.700 | 787.450 | 787.350 | 781.300 | 786.350 | 787.900 | 788.700 | |
| 57 | 787.425 | 787.775 | 788.300 | 788.725 | 787.900 | 787.000 | 787.750 | 788.150 | | 786.675 | 788.550 | 789.025 | |
| 58 | 789.375 | 788.150 | 789.250 | 789.100 | 789.075 | 787.650 | 788.250 | 788.550 | | 788.900 | 789.025 | 789.750 | |
| 59 | 789.775 | 788.975 | 789.775 | 789.725 | 789.650 | 789.100 | 789.525 | 789.175 | | 789.825 | 789.725 | | |
| 60 | | 789.500 | | | | 789.775 | 789.825 | 789.525 | | | | | |

## P8 FREQUENCY BAND (710–790 MHz) Continued

| Channel | Group 27 | Group 28 | Group 29 | Group 30 | Group 31 | Group 32 | Group 33 | Group 34 | Group 35 | Group 36 | Group 37 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **"Netherlands preferred: TV Ch. 51, 53, 59 (option 1) 710 - 718 MHz + 726 - 734 MHz + 774 - 782 MHz"** | **"Netherlands preferred: TV Ch. 51, 53, 59 (option 2) 710 - 718 MHz + 726 - 734 MHz + 774 - 782 MHz"** | **"Belgium preferred: VRT TV Ch. 51, 54 (option 1) 710 - 718 MHz + 734 - 742 MHz"** | **"Belgium preferred: VRT TV Ch. 51, 54 (option 2) 710 - 718 MHz + 734 - 742 MHz"** | **"Belgium preferred: BRF TV Ch. 52, 53 (option 1) 718 - 734 MHz"** | **"Belgium preferred: BRF TV Ch. 52, 53 (option 2) 718 - 734 MHz"** | **"Belgium preferred: Licensed Use TV Ch. 59, 60 (option 1) 774 - 790 MHz"** | **"Belgium preferred: Licensed Use TV Ch. 59, 60 (option 2) 774 - 790 MHz"** | **"European TV channel 51 optimized 710 - 718 MHz"** | **"European TV channel 52 optimized 718 - 726 MHz"** | **"European TV channel 53 optimized 726 - 734 MHz"** |
| **1** | 710.450 | 710.450 | 710.125 | 710.325 | 718.300 | 718.225 | 774.400 | 775.025 | 710.150 | 718.150 | 726.150 |
| **2** | 710.975 | 711.100 | 711.200 | 710.675 | 719.700 | 718.800 | 774.700 | 775.400 | 710.525 | 718.525 | 726.525 |
| **3** | 711.275 | 711.500 | 711.975 | 711.375 | 720.150 | 719.575 | 775.400 | 776.275 | 711.100 | 719.100 | 727.100 |
| **4** | 712.400 | 712.300 | 712.475 | 711.725 | 720.875 | 719.950 | 775.875 | 776.700 | 711.475 | 719.475 | 727.475 |
| **5** | 712.750 | 712.875 | 713.200 | 712.250 | 721.400 | 720.725 | 776.600 | 777.800 | 712.225 | 720.225 | 728.225 |
| **6** | 713.300 | 713.800 | 713.550 | 712.950 | 722.225 | 721.325 | 777.600 | 778.550 | 714.100 | 722.100 | 730.100 |
| **7** | 714.725 | 714.950 | 714.125 | 713.300 | 722.850 | 722.375 | 777.975 | 779.125 | 714.850 | 722.850 | 730.850 |
| **8** | 715.800 | 715.725 | 715.525 | 715.750 | 723.750 | 723.625 | 779.000 | 779.950 | 715.225 | 723.225 | 731.225 |
| **9** | 716.350 | 716.325 | 716.100 | 716.450 | 724.125 | 724.200 | 779.525 | 781.175 | 715.800 | 723.800 | 731.800 |
| **10** | 717.275 | 716.675 | 716.500 | 716.900 | 725.075 | 725.475 | 783.825 | 783.450 | 716.175 | 724.175 | 732.175 |
| **11** | 717.800 | 717.375 | 717.300 | 717.525 | 725.750 | 727.850 | 784.875 | 784.075 | 716.925 | 724.925 | 732.925 |
| **12** | 726.275 | 717.875 | 717.675 | 717.850 | 727.100 | 728.175 | 785.375 | 785.100 | 717.300 | 725.300 | 733.300 |
| **13** | 727.075 | 726.125 | 734.250 | 734.275 | 729.550 | 729.400 | 785.675 | 785.400 | 717.875 | 725.875 | 733.875 |
| **14** | 727.675 | 726.675 | 734.650 | 734.875 | 730.275 | 729.800 | 786.175 | 785.900 | | | |
| **15** | 728.100 | 727.050 | 735.250 | 735.900 | 731.175 | 730.400 | 787.150 | 787.150 | | | |
| **16** | 728.875 | 727.700 | 735.650 | 736.675 | 731.600 | 731.175 | 787.925 | 787.975 | | | |
| **17** | 729.350 | 728.150 | 736.425 | 737.100 | 732.275 | 732.325 | 788.325 | 788.575 | | | |
| **18** | 730.250 | 730.575 | 736.825 | 737.800 | 732.625 | 733.150 | 789.175 | 789.375 | | | |
| **19** | 730.850 | 731.200 | 737.400 | 738.125 | 733.850 | 733.725 | 789.850 | 789.825 | | | |
| **20** | 731.800 | 732.050 | 738.775 | 738.725 | | | | | | | |
| **21** | 732.175 | 732.350 | 739.900 | 740.150 | | | | | | | |
| **22** | 733.125 | 733.250 | 740.325 | 740.525 | | | | | | | |
| **23** | 733.825 | 733.700 | 741.350 | 741.075 | | | | | | | |
| **24** | 774.150 | 774.125 | 741.700 | 741.800 | | | | | | | |
| **25** | 774.450 | 774.525 | | | | | | | | | |
| **26** | 775.175 | 775.225 | | | | | | | | | |
| **27** | 775.600 | 775.725 | | | | | | | | | |
| **28** | 776.575 | 776.550 | | | | | | | | | |
| **29** | 777.775 | 778.050 | | | | | | | | | |
| **30** | 778.225 | 778.800 | | | | | | | | | |
| **31** | 779.300 | 779.150 | | | | | | | | | |
| **32** | 780.125 | 779.975 | | | | | | | | | |
| **33** | 780.650 | 780.600 | | | | | | | | | |
| **34** | 781.625 | 781.400 | | | | | | | | | |

| Channel | Group 38 | Group 39 | Group 40 | Group 41 | Group 42 | Group 43 | Group 44 |
|---|---|---|---|---|---|---|---|
| | "European TV channel 54 optimized 734 - 742 MHz" | "European TV channel 55 optimized 742 - 750 MHz" | "European TV channel 56 optimized 750 - 758 MHz" | "European TV channel 57 optimized 758 - 766 MHz" | "European TV channel 58 optimized 766 - 774 MHz" | "European TV channel 59 optimized 774 - 782 MHz" | "European TV channel 60 optimized 782 - 790 MHz" |
| **1** | 734.150 | 742.150 | 750.150 | 758.150 | 766.150 | 774.150 | 782.150 |
| **2** | 734.525 | 742.525 | 750.525 | 758.525 | 766.525 | 774.525 | 782.525 |
| **3** | 735.100 | 743.100 | 751.100 | 759.100 | 767.100 | 775.100 | 783.100 |
| **4** | 735.475 | 743.475 | 751.475 | 759.475 | 767.475 | 775.475 | 783.475 |
| **5** | 736.225 | 744.225 | 752.225 | 760.225 | 768.225 | 776.225 | 784.225 |
| **6** | 738.100 | 746.100 | 754.100 | 762.100 | 770.100 | 778.100 | 786.100 |
| **7** | 738.850 | 746.850 | 754.850 | 762.850 | 770.850 | 778.850 | 786.850 |
| **8** | 739.225 | 747.225 | 755.225 | 763.225 | 771.225 | 779.225 | 787.225 |
| **9** | 739.800 | 747.800 | 755.800 | 763.800 | 771.800 | 779.800 | 787.800 |
| **10** | 740.175 | 748.175 | 756.175 | 764.175 | 772.175 | 780.175 | 788.175 |
| **11** | 740.925 | 748.925 | 756.925 | 764.925 | 772.925 | 780.925 | 788.925 |
| **12** | 741.300 | 749.300 | 757.300 | 765.300 | 773.300 | 781.300 | 789.300 |
| **13** | 741.875 | 749.875 | 757.875 | 765.875 | 773.875 | 781.875 | 789.875 |

| Channel | Group 1 "Full Range max. # of compatible frequencies 710 - 787 MHz (option 1)" | Group 2 "Full Range max. # of compatible frequencies 710 - 787 MHz (option 2)" | Group 3 "Full Range max. # of compatible frequencies 710 - 787 MHz (option 3)" | Group 4 "Full Range max. # of compatible frequencies 710 - 787 MHz (option 4)" | Group 5 "Full Range max. # of compatible frequencies Compatible with Group 1 of G7C 710 - 787 MHz" | Group 6 "Full Range max. # of compatible frequencies Compatible with Group 2 of G7C 710 - 787 MHz" | Group 7 "Full Range max. # of compatible frequencies Compatible with Group 1 of L3E 710 - 787 MHz" | Group 8 "Full Range max. # of compatible frequencies Compatible with Group 2 of L3E 710 - 787 MHz" | Group 9 "Full Range max. # of compatible frequencies Compatible with Group 3 of G7C and Group 3 of L3E 710 - 787 MHz " | Group 10 "Full Range max. # of compatible frequencies Compatible with Group 4 of G7C and Group 4 of L3E 710 - 787 MHz " |
|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 710.450 | 710.425 | 710.800 | 710.125 | 710.225 | 710.825 | 710.200 | 710.750 | 710.500 | 710.375 |
| **2** | 710.950 | 711.025 | 711.475 | 710.800 | 710.700 | 711.550 | 711.325 | 711.700 | 712.400 | 710.775 |
| **3** | 711.825 | 712.100 | 711.975 | 711.925 | 711.350 | 712.575 | 712.800 | 712.375 | 712.750 | 711.350 |
| **4** | 712.150 | 712.975 | 712.950 | 712.300 | 713.150 | 713.175 | 713.525 | 713.425 | 713.700 | 712.650 |
| **5** | 713.025 | 713.450 | 714.250 | 713.550 | 713.825 | 714.525 | 713.950 | 714.175 | 716.300 | 713.075 |
| **6** | 714.825 | 714.325 | 715.975 | 714.150 | 715.850 | 716.125 | 714.700 | 715.450 | 717.275 | 713.775 |
| **7** | 715.775 | 716.200 | 716.800 | 714.975 | 717.250 | 717.125 | 716.300 | 718.075 | 717.750 | 714.200 |
| **8** | 716.375 | 716.925 | 717.225 | 715.600 | 717.675 | 718.550 | 717.150 | 719.675 | 718.625 | 719.125 |
| **9** | 717.250 | 717.425 | 717.950 | 716.575 | 718.325 | 718.875 | 717.450 | 720.975 | 720.525 | 719.625 |
| **10** | 718.300 | 719.150 | 719.750 | 717.275 | 719.900 | 720.300 | 718.325 | 722.500 | 721.225 | 721.300 |
| **11** | 719.975 | 719.725 | 723.175 | 720.225 | 721.750 | 722.875 | 718.900 | 724.650 | 721.550 | 722.375 |
| **12** | 720.400 | 721.100 | 724.175 | 720.675 | 727.125 | 723.675 | 726.175 | 724.950 | 722.925 | 722.700 |
| **13** | 721.275 | 725.725 | 725.525 | 721.450 | 727.875 | 724.175 | 727.100 | 725.650 | 727.725 | 723.225 |
| **14** | 721.975 | 726.750 | 726.075 | 721.925 | 729.375 | 724.900 | 727.775 | 727.175 | 729.100 | 724.275 |
| **15** | 722.900 | 727.600 | 727.350 | 722.850 | 730.550 | 726.450 | 728.650 | 728.050 | 729.875 | 724.850 |
| **16** | 723.375 | 728.150 | 729.750 | 723.425 | 731.150 | 727.825 | 730.625 | 729.125 | 730.900 | 727.650 |
| **17** | 726.525 | 729.800 | 731.900 | 725.200 | 731.950 | 731.700 | 730.925 | 732.050 | 731.725 | 728.150 |
| **18** | 734.150 | 730.925 | 732.850 | 725.950 | 733.550 | 733.425 | 732.375 | 735.525 | 732.325 | 729.175 |
| **19** | 735.150 | 732.600 | 734.700 | 734.075 | 734.775 | 734.550 | 732.800 | 736.725 | 733.275 | 729.775 |
| **20** | 737.050 | 733.225 | 737.175 | 734.375 | 735.525 | 736.000 | 734.425 | 739.850 | 735.100 | 737.450 |
| **21** | 737.650 | 733.525 | 739.125 | 735.600 | 738.675 | 738.200 | 739.675 | 740.575 | 736.475 | 737.875 |
| **22** | 738.025 | 734.900 | 741.300 | 735.900 | 739.575 | 738.850 | 741.325 | 741.125 | 737.200 | 738.975 |
| **23** | 738.600 | 735.725 | 741.725 | 737.925 | 742.950 | 740.125 | 742.125 | 742.225 | 741.500 | 739.650 |
| **24** | 739.375 | 736.850 | 742.700 | 738.850 | 744.175 | 740.900 | 743.550 | 742.600 | 744.325 | 740.675 |
| **25** | 739.775 | 741.950 | 745.050 | 739.600 | 744.675 | 742.325 | 743.850 | 745.025 | 744.725 | 742.050 |
| **26** | 740.350 | 744.425 | 746.050 | 740.675 | 745.800 | 747.450 | 745.225 | 747.275 | 746.250 | 742.875 |
| **27** | 742.850 | 746.425 | 747.225 | 741.100 | 746.600 | 748.025 | 747.250 | 749.900 | 746.900 | 743.250 |
| **28** | 743.350 | 747.400 | 747.650 | 744.075 | 747.700 | 748.975 | 747.775 | 750.375 | 748.725 | 744.250 |
| **29** | 752.850 | 749.175 | 749.025 | 748.775 | 748.350 | 749.350 | 749.450 | 751.175 | 749.300 | 744.725 |
| **30** | 753.200 | 749.900 | 750.000 | 749.725 | 751.575 | 750.275 | 753.950 | 753.750 | 750.325 | 752.600 |
| **31** | 753.975 | 751.650 | 751.325 | 750.450 | 753.400 | 751.000 | 754.550 | 755.400 | 754.575 | 753.900 |
| **32** | 755.900 | 752.675 | 752.175 | 750.975 | 754.325 | 752.050 | 755.625 | 756.150 | 754.875 | 754.575 |
| **33** | 756.375 | 754.525 | 753.325 | 751.700 | 758.650 | 753.375 | 756.450 | 756.650 | 755.575 | 755.900 |
| **34** | 757.125 | 755.000 | 754.175 | 752.750 | 759.350 | 754.275 | 757.075 | 758.325 | 756.825 | 756.350 |
| **35** | 757.500 | 756.625 | 755.700 | 754.250 | 761.875 | 754.950 | 758.125 | 758.850 | 757.900 | 757.050 |
| **36** | 759.275 | 757.675 | 757.900 | 754.800 | 762.300 | 755.350 | 760.400 | 763.100 | 758.350 | 758.625 |
| **37** | 760.100 | 758.525 | 758.525 | 755.575 | 763.150 | 756.875 | 760.875 | 764.225 | 763.925 | 759.000 |
| **38** | 760.500 | 759.575 | 760.375 | 756.125 | 764.750 | 766.525 | 768.125 | 764.525 | 764.600 | 759.850 |
| **39** | 761.975 | 761.825 | 761.825 | 757.275 | 766.625 | 767.125 | 769.275 | 769.175 | 765.675 | 766.875 |
| **40** | 763.250 | 762.250 | 764.650 | 757.700 | 768.150 | 768.000 | 769.725 | 769.800 | 766.200 | 769.875 |
| **41** | 764.075 | 763.175 | 766.050 | 767.325 | 768.775 | 768.375 | 771.100 | 771.075 | 767.600 | 770.950 |
| **42** | 768.425 | 768.450 | 768.750 | 767.750 | 769.200 | 769.275 | 771.550 | 772.050 | 770.250 | 771.850 |
| **43** | 769.725 | 770.450 | 769.150 | 768.850 | 773.475 | 769.975 | 772.675 | 774.475 | 771.750 | 772.400 |
| **44** | 770.300 | 771.525 | 770.575 | 769.775 | 776.275 | 770.875 | 773.575 | 775.650 | 772.050 | 773.225 |
| **45** | 771.575 | 773.100 | 771.125 | 771.100 | 777.250 | 772.225 | 774.675 | 776.275 | 772.600 | 774.400 |
| **46** | 771.975 | 773.450 | 772.650 | 771.625 | 780.050 | 772.650 | 775.150 | 777.150 | 778.725 | 775.850 |
| **47** | 773.950 | 774.400 | 774.375 | 772.650 | 780.650 | 774.000 | 776.425 | 778.350 | 780.925 | 776.175 |
| **48** | 775.125 | 774.900 | 775.425 | 773.025 | 781.525 | 774.850 | 776.900 | 778.850 | 781.950 | 778.200 |
| **49** | 775.750 | 776.050 | 776.950 | 773.975 | 782.625 | 775.525 | 780.825 | 783.800 | 782.375 | 780.925 |
| **50** | 777.050 | 776.875 | 777.300 | 775.725 | 783.175 | 776.650 | 782.425 | 784.100 | 783.325 | 782.650 |
| **51** | 778.000 | 777.500 | 781.075 | 780.950 | 784.225 | 783.550 | 782.875 | 784.900 | 783.650 | 784.200 |
| **52** | 782.875 | 777.950 | 781.475 | 782.275 | 785.525 | 784.250 | 783.750 | 785.325 | 784.450 | 785.075 |
| **53** | 783.275 | 784.200 | 782.450 | 782.900 | 786.100 | 785.950 | 785.875 | 786.200 | 786.700 | 786.800 |
| **54** | 784.200 | 784.875 | 783.150 | 783.200 | | | | | | |
| **55** | 784.850 | 785.925 | 783.650 | 783.875 | | | | | | |
| **56** | | 786.375 | 784.475 | 785.125 | | | | | | |
| **57** | | | | 785.950 | | | | | | |

| Channel | Group 11 | Group 12 | Group 13 | Group 14 | Group 15 | Group 16 | Group 17 | Group 18 | Group 19 | Group 20 | Group 21 | Group 22 | Group 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | "Germany preferred: Full Range w/o TV Ch. 52 710 - 718 MHz + 726 - 787 MHz" | "Germany preferred: Full Range w/o TV Ch. 53 710 - 726 MHz + 734 - 787 MHz" | "Germany preferred: Full Range w/o TV Ch. 54 710 - 734 MHz + 742 - 787 MHz" | "Germany preferred: Full Range w/o TV Ch. 55 710 - 742 MHz + 750 - 787 MHz" | "Germany preferred: Full Range w/o TV Ch. 56 710 - 750 MHz + 758 - 787 MHz" | "Germany preferred: Full Range w/o TV Ch. 57 710 - 758 MHz + 766 - 787 MHz" | "Germany preferred: Full Range w/o TV Ch. 58 710 - 766 MHz + 774 - 787 MHz" | "Germany preferred: Full Range w/o TV Ch. 59 710 - 774 MHz + 782 - 787 MHz" | "Germany preferred: Full Range w/o TV Ch. 60 710 - 782 MHz" | "Germany preferred: Full Range w/o TV Ch. 53, 57 710 - 726 MHz + 734 - 758 MHz + 766 - 787 MHz" | "Germany preferred: Full Range w/o TV Ch. 56, 59 710 - 750 MHz + 758 - 774 MHz + 782 - 787 MHz" | "Germany preferred: Full Range w/o TV Ch. 52, 55, 57 710 - 718 MHz + 726 - 742 MHz + 750 - 758 MHz + 766 - 787 MHz" | "Germany preferred: Full Range w/o TV Ch. 52, 55, 60 710 - 718 MHz + 726 - 742 MHz + 750 - 782 MHz" |
| 1 | 710.200 | 710.200 | 710.350 | 710.350 | 710.575 | 710.275 | 710.600 | 710.200 | 710.750 | 710.675 | 710.225 | 710.425 | 710.375 |
| 2 | 710.700 | 710.575 | 710.725 | 711.700 | 711.425 | 710.900 | 711.775 | 711.125 | 711.275 | 712.075 | 710.600 | 710.875 | 710.800 |
| 3 | 711.400 | 711.975 | 711.450 | 713.250 | 712.075 | 711.950 | 712.200 | 711.725 | 712.000 | 713.275 | 711.325 | 711.650 | 711.550 |
| 4 | 711.725 | 712.475 | 711.975 | 713.700 | 712.450 | 712.750 | 713.375 | 712.500 | 713.550 | 714.650 | 711.875 | 712.675 | 712.125 |
| 5 | 712.275 | 713.200 | 714.575 | 714.625 | 713.175 | 713.925 | 714.175 | 713.625 | 714.300 | 715.225 | 712.225 | 713.100 | 712.525 |
| 6 | 714.900 | 713.575 | 715.275 | 715.000 | 714.725 | 714.375 | 715.300 | 714.325 | 715.500 | 715.625 | 712.750 | 714.225 | 713.200 |
| 7 | 715.450 | 714.125 | 715.625 | 716.500 | 716.775 | 715.725 | 716.875 | 716.350 | 718.100 | 716.350 | 715.100 | 715.550 | 714.050 |
| 8 | 715.825 | 715.600 | 716.475 | 717.275 | 717.775 | 716.400 | 717.575 | 718.800 | 718.425 | 716.900 | 715.800 | 716.075 | 715.275 |
| 9 | 716.475 | 716.000 | 717.000 | 718.675 | 718.600 | 718.175 | 719.250 | 719.425 | 719.225 | 718.800 | 716.300 | 717.050 | 716.250 |
| 10 | 717.325 | 720.200 | 717.900 | 720.325 | 720.150 | 721.350 | 720.175 | 720.375 | 721.075 | 719.950 | 716.975 | 717.400 | 717.000 |
| 11 | 717.850 | 721.175 | 722.950 | 721.125 | 720.625 | 721.700 | 721.375 | 720.775 | 721.725 | 720.250 | 723.025 | 726.925 | 717.525 |
| 12 | 727.975 | 721.975 | 724.900 | 723.825 | 721.275 | 722.225 | 722.150 | 723.100 | 723.475 | 720.900 | 724.175 | 727.675 | 726.175 |
| 13 | 728.750 | 722.450 | 725.750 | 724.400 | 725.300 | 722.925 | 723.925 | 723.525 | 724.450 | 722.200 | 724.850 | 728.125 | 727.050 |
| 14 | 729.225 | 723.175 | 726.350 | 725.475 | 726.275 | 723.850 | 724.775 | 724.200 | 726.950 | 722.650 | 726.175 | 728.800 | 727.525 |
| 15 | 729.900 | 723.550 | 727.175 | 729.575 | 727.550 | 724.950 | 725.350 | 724.700 | 727.475 | 723.300 | 727.075 | 729.650 | 728.225 |
| 16 | 730.250 | 724.150 | 727.475 | 730.925 | 728.625 | 726.525 | 728.375 | 726.050 | 728.350 | 723.775 | 728.425 | 730.300 | 730.050 |
| 17 | 730.775 | 725.350 | 728.200 | 731.325 | 731.575 | 727.250 | 728.800 | 726.950 | 731.075 | 734.850 | 728.850 | 731.450 | 730.450 |
| 18 | 733.100 | 725.650 | 730.450 | 732.075 | 732.225 | 729.775 | 729.950 | 729.400 | 731.650 | 735.900 | 729.525 | 732.125 | 731.175 |
| 19 | 734.175 | 734.925 | 730.975 | 732.475 | 733.275 | 734.350 | 730.750 | 732.275 | 732.000 | 736.475 | 730.450 | 735.800 | 731.500 |
| 20 | 734.725 | 736.075 | 732.200 | 733.425 | 733.575 | 735.150 | 731.775 | 736.375 | 733.625 | 737.275 | 731.725 | 737.100 | 732.075 |
| 21 | 737.275 | 736.875 | 732.525 | 736.125 | 734.150 | 738.475 | 733.425 | 736.725 | 734.050 | 738.300 | 732.300 | 737.500 | 734.500 |
| 22 | 737.825 | 738.600 | 733.025 | 736.575 | 735.275 | 739.125 | 734.025 | 737.325 | 737.300 | 739.025 | 734.375 | 738.125 | 735.050 |
| 23 | 738.950 | 739.150 | 742.700 | 738.450 | 742.350 | 739.950 | 737.075 | 738.750 | 737.875 | 740.300 | 741.375 | 740.725 | 736.375 |
| 24 | 741.750 | 739.950 | 743.325 | 739.000 | 743.525 | 740.350 | 740.300 | 739.550 | 740.100 | 740.975 | 742.025 | 741.075 | 737.275 |
| 25 | 742.375 | 740.950 | 744.525 | 739.300 | 744.075 | 741.975 | 745.050 | 742.000 | 743.175 | 741.300 | 743.025 | 741.700 | 739.250 |
| 26 | 744.075 | 741.650 | 744.850 | 739.975 | 744.925 | 742.775 | 746.275 | 743.050 | 744.300 | 741.950 | 743.550 | 750.200 | 740.500 |
| 27 | 748.450 | 742.550 | 745.525 | 750.850 | 745.575 | 744.525 | 746.925 | 745.050 | 745.950 | 743.875 | 745.250 | 750.500 | 740.950 |
| 28 | 748.950 | 745.325 | 748.050 | 752.025 | 746.500 | 746.750 | 747.825 | 746.250 | 747.950 | 749.725 | 746.075 | 750.975 | 751.275 |
| 29 | 751.200 | 748.650 | 748.700 | 752.900 | 746.800 | 747.650 | 748.125 | 748.275 | 749.475 | 750.200 | 746.550 | 752.125 | 752.025 |
| 30 | 751.900 | 749.450 | 749.100 | 753.525 | 748.425 | 748.275 | 749.600 | 752.125 | 750.250 | 750.925 | 747.225 | 754.525 | 752.550 |
| 31 | 752.300 | 749.950 | 749.975 | 753.975 | 749.175 | 751.700 | 750.900 | 754.325 | 750.550 | 752.500 | 748.100 | 755.050 | 753.475 |
| 32 | 753.075 | 751.050 | 750.325 | 754.775 | 749.750 | 752.225 | 752.550 | 754.750 | 752.125 | 753.275 | 748.775 | 755.400 | 754.225 |
| 33 | 755.925 | 751.725 | 752.200 | 755.325 | 758.600 | 752.925 | 753.250 | 755.350 | 753.400 | 753.575 | 749.850 | 756.450 | 755.350 |
| 34 | 756.375 | 752.850 | 758.475 | 756.875 | 759.025 | 756.000 | 755.775 | 756.750 | 755.475 | 754.975 | 758.525 | 756.750 | 756.975 |
| 35 | 757.000 | 753.250 | 759.275 | 758.175 | 759.975 | 756.425 | 756.300 | 757.575 | 755.975 | 755.850 | 758.950 | 757.325 | 757.850 |
| 36 | 759.325 | 754.275 | 761.450 | 759.200 | 760.425 | 757.150 | 757.475 | 759.500 | 757.100 | 757.200 | 759.750 | 757.675 | 758.425 |
| 37 | 760.275 | 754.975 | 762.300 | 760.025 | 761.100 | 766.450 | 757.850 | 761.025 | 759.050 | 757.700 | 761.275 | 766.525 | 760.050 |
| 38 | 761.875 | 756.075 | 763.350 | 760.500 | 762.025 | 766.950 | 759.750 | 762.000 | 759.575 | 766.625 | 763.075 | 767.175 | 760.875 |
| 39 | 765.275 | 757.675 | 764.075 | 761.225 | 762.425 | 767.250 | 760.400 | 764.850 | 761.875 | 767.200 | 764.300 | 767.525 | 762.425 |
| 40 | 766.175 | 758.425 | 765.050 | 762.125 | 763.425 | 767.750 | 761.225 | 765.850 | 762.825 | 767.525 | 764.700 | 768.325 | 766.800 |
| 41 | 766.525 | 761.475 | 765.650 | 768.650 | 765.275 | 768.725 | 762.225 | 766.200 | 763.375 | 768.725 | 766.575 | 769.825 | 767.275 |
| 42 | 768.475 | 766.375 | 767.625 | 769.850 | 766.675 | 769.275 | 764.225 | 767.050 | 765.350 | 769.025 | 766.950 | 770.375 | 768.550 |
| 43 | 768.975 | 767.700 | 770.025 | 772.425 | 767.650 | 771.800 | 774.150 | 768.075 | 766.825 | 771.700 | 767.850 | 771.575 | 770.050 |
| 44 | 770.950 | 769.275 | 771.425 | 773.775 | 773.750 | 772.525 | 774.675 | 769.475 | 769.350 | 772.200 | 769.425 | 771.950 | 770.875 |
| 45 | 772.275 | 771.050 | 773.250 | 774.150 | 775.500 | 773.075 | 775.475 | 771.100 | 770.550 | 772.875 | 770.275 | 773.875 | 771.950 |
| 46 | 773.250 | 771.525 | 774.100 | 774.725 | 776.050 | 773.425 | 776.625 | 771.600 | 772.550 | 773.225 | 771.700 | 774.625 | 772.500 |
| 47 | 774.425 | 772.475 | 775.500 | 775.500 | 777.625 | 774.075 | 777.525 | 772.375 | 772.950 | 773.750 | 772.450 | 775.150 | 774.300 |
| 48 | 774.825 | 774.100 | 776.300 | 776.475 | 778.750 | 774.550 | 779.350 | 773.375 | 773.900 | 780.650 | 772.950 | 781.550 | 775.925 |
| 49 | 779.025 | 774.775 | 777.550 | 779.375 | 779.450 | 775.450 | 780.200 | 773.900 | 775.550 | 781.225 | 773.800 | 782.325 | 777.275 |
| 50 | 779.525 | 776.225 | 779.075 | 780.050 | 780.475 | 780.675 | 780.675 | 782.425 | 776.050 | 782.075 | 782.450 | 783.975 | 777.925 |
| 51 | 781.800 | 777.500 | 779.775 | 782.025 | 781.800 | 782.475 | 781.375 | 783.300 | 776.375 | 782.400 | 783.075 | 784.950 | 779.025 |
| 52 | 782.925 | 782.975 | 780.100 | 782.925 | 782.675 | 782.825 | 781.700 | 783.925 | 777.500 | 783.125 | 784.900 | 785.425 | 779.625 |
| 53 | 783.825 | 783.775 | 782.200 | 783.450 | 784.675 | 783.375 | 782.350 | 784.975 | 777.900 | 784.625 | 785.350 | 786.175 | 780.525 |
| 54 | 785.300 | 785.150 | 785.625 | 786.675 | 786.375 | 784.650 | 784.325 | 786.325 | 780.000 | 785.375 | 786.525 | 786.675 | 781.150 |
| 55 | 786.025 | 785.475 | | | | 785.350 | 786.475 | | 780.775 | 785.775 | | | |
| 56 | 786.500 | | | | | 785.700 | | | 781.300 | 786.350 | | | |
| 57 | | | | | | | | | | 786.675 | | | |

| Channel | Group 24 "Netherlands preferred: TV Ch. 51, 53, 59 (option 1) 710 - 718 MHz + 726 - 734 MHz + 774 - 782 MHz" | Group 25 "Netherlands preferred: TV Ch. 51, 53, 59 (option 2) 710 - 718 MHz + 726 - 734 MHz + 774 - 782 MHz" | Group 26 "Belgium pre-ferred: VRT TV Ch. 51, 54 (option 1) 710 - 718 MHz + 734 - 742 MHz" | Group 27 "Belgium pre-ferred: VRT TV Ch. 51, 54 (option 2) 710 - 718 MHz + 734 - 742 MHz" | Group 28 "Belgium pre-ferred: BRF TV Ch. 52, 53 (option 1) 718 - 734 MHz" | Group 29 "Belgium preferred: BRF TV Ch. 52, 53 (option 2) 718 - 734 MHz" | Group 30 "Belgium preferred: Licensed Use TV Ch. 59, 60 (option 1) 774 - 787 MHz" | Group 31 "Belgium preferred: Licensed Use TV Ch. 59, 60 (option 2) 774 - 787 MHz" |
|---|---|---|---|---|---|---|---|---|
| 1 | 710.450 | 710.450 | 710.125 | 710.325 | 718.300 | 718.225 | 774.400 | 775.025 |
| 2 | 710.975 | 711.100 | 711.200 | 710.675 | 719.700 | 718.800 | 774.700 | 775.400 |
| 3 | 711.275 | 711.500 | 711.975 | 711.375 | 720.150 | 719.575 | 775.400 | 776.275 |
| 4 | 712.400 | 712.300 | 712.475 | 711.725 | 720.875 | 719.950 | 775.875 | 776.700 |
| 5 | 712.750 | 712.875 | 713.200 | 712.250 | 721.400 | 720.725 | 776.600 | 777.800 |
| 6 | 713.300 | 713.800 | 713.550 | 712.950 | 722.225 | 721.325 | 777.600 | 778.550 |
| 7 | 714.725 | 714.950 | 714.125 | 713.300 | 722.850 | 722.375 | 777.975 | 779.125 |
| 8 | 715.800 | 715.725 | 715.525 | 715.750 | 723.750 | 723.625 | 779.000 | 779.950 |
| 9 | 716.350 | 716.325 | 716.100 | 716.450 | 724.125 | 724.200 | 779.525 | 781.175 |
| 10 | 717.275 | 716.675 | 716.500 | 716.900 | 725.075 | 725.475 | 783.825 | 783.450 |
| 11 | 717.800 | 717.375 | 717.300 | 717.525 | 725.750 | 727.850 | 784.875 | 784.075 |
| 12 | 726.275 | 717.875 | 717.675 | 717.850 | 727.100 | 728.175 | 785.375 | 785.100 |
| 13 | 727.075 | 726.125 | 734.250 | 734.275 | 729.550 | 729.400 | 785.675 | 785.400 |
| 14 | 727.675 | 726.675 | 734.650 | 734.875 | 730.275 | 729.800 | 786.175 | 785.900 |
| 15 | 728.100 | 727.050 | 735.250 | 735.900 | 731.175 | 730.400 | | |
| 16 | 728.875 | 727.700 | 735.650 | 736.675 | 731.600 | 731.175 | | |
| 17 | 729.350 | 728.150 | 736.425 | 737.100 | 732.275 | 732.325 | | |
| 18 | 730.250 | 730.575 | 736.825 | 737.800 | 732.625 | 733.150 | | |
| 19 | 730.850 | 731.200 | 737.400 | 738.125 | 733.850 | 733.725 | | |
| 20 | 731.800 | 732.050 | 738.775 | 738.725 | | | | |
| 21 | 732.175 | 732.350 | 739.900 | 740.150 | | | | |
| 22 | 733.125 | 733.250 | 740.325 | 740.525 | | | | |
| 23 | 733.825 | 733.700 | 741.350 | 741.075 | | | | |
| 24 | 774.150 | 774.125 | 741.700 | 741.800 | | | | |
| 25 | 774.450 | 774.525 | | | | | | |
| 26 | 775.175 | 775.225 | | | | | | |
| 27 | 775.600 | 775.725 | | | | | | |
| 28 | 776.575 | 776.550 | | | | | | |
| 29 | 777.775 | 778.050 | | | | | | |
| 30 | 778.225 | 778.800 | | | | | | |
| 31 | 779.300 | 779.150 | | | | | | |
| 32 | 780.125 | 779.975 | | | | | | |
| 33 | 780.650 | 780.600 | | | | | | |
| 34 | 781.625 | 781.400 | | | | | | |

| Channel | Group 32 "European TV channel 51 optimized 710 - 718 MHz" | Group 33 "European TV channel 52 optimized 718 - 726 MHz" | Group 34 "European TV channel 53 optimized 726 - 734 MHz" | Group 35 "European TV channel 54 optimized 734 - 742 MHz" | Group 36 "European TV channel 55 optimized 742 - 750 MHz" | Group 37 "European TV channel 56 optimized 750 - 758 MHz" | Group 38 "European TV channel 57 optimized 758 - 766 MHz" | Group 39 "European TV channel 58 optimized 766 - 774 MHz" | Group 40 "European TV channel 59 optimized 774 - 782 MHz" | Group 41 "European TV channel 60 optimized 782 - 787 MHz" |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 710.150 | 718.150 | 726.150 | 734.150 | 742.150 | 750.150 | 758.150 | 766.150 | 774.150 | 782.150 |
| 2 | 710.525 | 718.525 | 726.525 | 734.525 | 742.525 | 750.525 | 758.525 | 766.525 | 774.525 | 782.525 |
| 3 | 711.100 | 719.100 | 727.100 | 735.100 | 743.100 | 751.100 | 759.100 | 767.100 | 775.100 | 783.100 |
| 4 | 711.475 | 719.475 | 727.475 | 735.475 | 743.475 | 751.475 | 759.475 | 767.475 | 775.475 | 783.475 |
| 5 | 712.225 | 720.225 | 728.225 | 736.225 | 744.225 | 752.225 | 760.225 | 768.225 | 776.225 | 784.225 |
| 6 | 714.100 | 722.100 | 730.100 | 738.100 | 746.100 | 754.100 | 762.100 | 770.100 | 778.100 | 786.100 |
| 7 | 714.850 | 722.850 | 730.850 | 738.850 | 746.850 | 754.850 | 762.850 | 770.850 | 778.850 | 786.850 |
| 8 | 715.225 | 723.225 | 731.225 | 739.225 | 747.225 | 755.225 | 763.225 | 771.225 | 779.225 | |
| 9 | 715.800 | 723.800 | 731.800 | 739.800 | 747.800 | 755.800 | 763.800 | 771.800 | 779.800 | |
| 10 | 716.175 | 724.175 | 732.175 | 740.175 | 748.175 | 756.175 | 764.175 | 772.175 | 780.175 | |
| 11 | 716.925 | 724.925 | 732.925 | 740.925 | 748.925 | 756.925 | 764.925 | 772.925 | 780.925 | |
| 12 | 717.300 | 725.300 | 733.300 | 741.300 | 749.300 | 757.300 | 765.300 | 773.300 | 781.300 | |
| 13 | 717.875 | 725.875 | 733.875 | 741.875 | 749.875 | 757.875 | 765.875 | 773.875 | 781.875 | |

| Channel | Group 1 | Group 2 | Group 3 | Group 4 | Group 5 | Group 6 | Group 7 | Group 8 | Group 9 | Group 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| | Full Range max. # of comp. fre- quencies (option 1) | Full Range max. # of comp. fre- quencies (option 2) | Full Range max. # of comp. fre- quencies (option 3) | Full Range max. # of comp. fre- quencies (option 4) | France preferred: User Group A (option 1) | France preferred: User Group A (option 2) | France preferred: User Group A (option 3) | France preferred: User Group B (option 1) | France preferred: User Group B (option 2) | France preferred: User Group B (option 3) |
| 1 | 740.300 | 740.425 | 740.100 | 740.625 | 740.250 | 740.250 | 742.750 | 740.900 | 740.500 | 740.900 |
| 2 | 740.825 | 740.850 | 740.625 | 741.050 | 742.750 | 743.250 | 743.500 | 741.300 | 740.900 | 741.300 |
| 3 | 742.400 | 742.100 | 742.200 | 742.300 | 743.250 | 743.750 | 745.250 | 742.100 | 742.100 | 746.975 |
| 4 | 742.800 | 742.650 | 742.600 | 742.850 | 744.500 | 745.250 | 746.500 | 744.025 | 744.025 | 748.900 |
| 5 | 745.000 | 744.025 | 744.800 | 744.225 | 746.500 | 746.500 | 747.500 | 745.500 | 744.775 | 749.700 |
| 6 | 745.975 | 744.675 | 745.775 | 744.875 | 747.250 | 753.750 | 751.750 | 749.300 | 746.225 | 752.025 |
| 7 | 748.850 | 745.600 | 748.650 | 745.800 | 752.500 | 755.500 | 753.250 | 754.225 | 756.900 | 753.500 |
| 8 | 749.950 | 750.050 | 749.750 | 750.250 | 759.750 | 763.500 | 753.750 | 760.025 | 761.500 | 764.500 |
| 9 | 753.350 | 752.625 | 753.150 | 752.825 | 767.500 | 769.250 | 758.750 | 770.975 | 764.500 | 768.775 |
| 10 | 756.100 | 753.525 | 755.900 | 753.725 | 768.500 | 771.250 | 771.750 | 774.100 | 770.975 | 774.100 |
| 11 | 764.875 | 758.825 | 764.675 | 759.025 | 769.750 | 772.250 | 775.500 | 774.500 | 772.900 | 776.025 |
| 12 | 770.150 | 766.275 | 769.950 | 766.475 | 771.750 | 774.750 | 776.500 | 781.300 | 773.300 | 778.975 |
| 13 | 771.800 | 769.350 | 771.600 | 769.550 | 772.250 | 775.500 | 777.750 | 782.500 | 776.775 | 781.700 |
| 14 | 772.575 | 770.025 | 772.375 | 770.225 | 786.500 | 785.750 | 787.500 | 784.025 | 778.225 | 782.500 |
| 15 | 774.325 | 771.300 | 774.125 | 771.500 | 794.500 | 791.750 | 791.500 | 786.225 | 778.975 | 784.775 |
| 16 | 776.625 | 777.375 | 776.425 | 777.575 | 796.250 | 795.500 | 799.750 | 786.975 | 796.500 | 796.500 |
| 17 | 782.700 | 779.675 | 782.500 | 779.875 | 799.750 | 800.500 | 801.750 | 802.975 | 797.700 | 800.775 |
| 18 | 783.975 | 781.425 | 783.775 | 781.625 | 803.500 | 801.250 | 803.250 | 806.100 | 806.500 | 804.500 |
| 19 | 784.650 | 782.200 | 784.450 | 782.400 | 806.750 | 803.250 | 804.250 | 808.025 | 808.025 | 805.700 |
| 20 | 787.725 | 783.850 | 787.525 | 784.050 | 807.500 | 807.500 | 807.500 | 809.500 | 810.225 | 810.225 |
| 21 | 795.175 | 789.125 | 794.975 | 789.325 | 809.750 | 808.500 | 809.250 | 812.500 | 810.975 | 810.975 |
| 22 | 800.475 | 797.900 | 800.275 | 798.100 | 811.750 | 809.750 | 809.750 | 813.300 | 813.700 | 812.900 |
| 23 | 801.325 | 800.650 | 801.125 | 800.850 | 812.250 | 811.500 | 810.500 | 813.700 | 753.500 | 813.300 |
| 24 | 803.950 | 804.050 | 803.750 | 804.250 | 748.250 | 745.750 | 744.500 | 746.225 | 754.975 | 744.775 |
| 25 | 808.400 | 805.150 | 808.200 | 805.350 | 750.750 | 750.750 | 745.750 | 753.500 | 757.700 | 746.225 |
| 26 | 809.325 | 808.025 | 809.125 | 808.225 | 755.750 | 752.500 | 751.250 | 758.100 | 766.500 | 750.100 |
| 27 | 809.975 | 809.000 | 809.775 | 809.200 | 759.250 | 753.250 | 754.500 | 758.500 | 781.700 | 765.300 |
| 28 | 811.350 | 811.200 | 811.150 | 811.400 | 762.500 | 754.500 | 755.500 | 765.300 | 788.500 | 768.025 |
| 29 | 811.900 | 811.600 | 811.700 | 811.800 | 763.500 | 758.750 | 759.500 | 768.775 | 789.300 | 772.500 |
| 30 | 813.150 | 813.175 | 812.950 | 813.375 | 766.750 | 760.500 | 760.500 | 769.500 | 792.025 | 773.700 |
| 31 | 813.575 | 813.700 | 813.375 | 813.900 | 770.500 | 767.500 | 766.750 | 772.900 | 792.775 | 781.300 |
| 32 | 754.400 | 751.050 | 754.200 | 751.250 | 775.500 | 770.500 | 770.500 | 788.900 | 797.300 | 792.025 |
| 33 | 768.000 | 772.025 | 767.800 | 772.225 | 779.500 | 776.500 | 771.250 | 797.300 | 798.500 | 794.975 |
| 34 | 778.000 | 776.000 | 777.800 | 776.200 | 782.750 | 777.750 | 779.500 | 801.500 | 800.775 | 797.300 |
| 35 | 781.975 | 786.000 | 781.775 | 786.200 | 783.250 | 779.250 | 782.750 | | | |
| 36 | 802.950 | 799.600 | 802.750 | 799.800 | 784.500 | 782.750 | 784.500 | | | |
| 37 | 743.550 | 746.200 | 743.350 | 746.400 | 785.250 | 784.500 | 785.250 | | | |
| 38 | 750.400 | 755.625 | 750.200 | 755.825 | 788.250 | 785.250 | 785.750 | | | |
| 39 | 751.425 | 768.400 | 751.225 | 768.600 | 791.750 | 786.500 | 786.500 | | | |
| 40 | 785.600 | 802.575 | 785.400 | 802.775 | 795.500 | 788.250 | 790.750 | | | |
| 41 | 798.375 | 803.600 | 798.175 | 803.800 | 798.750 | 796.250 | 793.250 | | | |
| 42 | 807.800 | 810.450 | 807.600 | 810.650 | 800.500 | 801.750 | 800.500 | | | |
| 43 | 767.400 | 754.825 | 767.200 | 755.025 | 808.500 | 810.500 | 808.500 | | | |
| 44 | 768.950 | 758.375 | 768.750 | 758.575 | 810.500 | 812.250 | 812.250 | | | |
| 45 | 769.700 | 763.725 | 769.500 | 763.925 | | | | | | |
| 46 | 790.275 | 784.300 | 790.075 | 784.500 | | | | | | |
| 47 | 795.625 | 785.050 | 795.425 | 785.250 | | | | | | |
| 48 | 799.175 | 786.600 | 798.975 | 786.800 | | | | | | |

| Channel | Group11 | Group 12 | Group 13 | Group 14 | Group 15 | Group 16 | Group 17 | Group 18 | Group 19 | Group 20 |
|---|---|---|---|---|---|---|---|---|---|---|
| | France preferred: User Group C (option 1) | France preferred: User Group C (option 2) | France preferred: User Group C (option 3) | Germany preferred: User Group 1 790-814 MHz | Germany preferred: User Group 2 790-814 MHz | Germany preferred: User Group 3A 790-814 MHz | Germany preferred: User Group 3B 790-814 MHz | Germany preferred: User Group 3C 790-814 MHz | Germany pre- ferred: User Group 3D 790-814 MHz | Germany pre- ferred: User Group 4 790-814 MHz (option 1) |
| 1 | 741.100 | 740.700 | 741.100 | 790.100 | 790.100 | 790.250 | 790.300 | 790.350 | 790.400 | 791.475 |
| 2 | 741.900 | 741.100 | 741.500 | 791.050 | 791.575 | 792.325 | 791.250 | 791.300 | 790.800 | 792.525 |
| 3 | 742.300 | 742.300 | 742.300 | 793.575 | 792.050 | 792.900 | 792.950 | 794.925 | 798.800 | 793.200 |
| 4 | 743.000 | 743.000 | 744.975 | 794.675 | 794.425 | 793.725 | 794.875 | 795.450 | 803.500 | 795.625 |
| 5 | 748.700 | 750.300 | 746.025 | 803.200 | 796.250 | 795.350 | 795.400 | 801.000 | 804.725 | 797.125 |
| 6 | 751.000 | 752.975 | 748.000 | 804.425 | 797.500 | 799.900 | 796.150 | 803.450 | 805.700 | 802.525 |
| 7 | 754.025 | 757.900 | 752.225 | 806.100 | 799.575 | 800.900 | 798.700 | 806.350 | 806.400 | 804.850 |
| 8 | 765.500 | 759.000 | 757.500 | 806.500 | 806.600 | 807.200 | 801.775 | 806.750 | 808.475 | 805.250 |
| 9 | 768.225 | 770.775 | 759.000 | 811.200 | 809.325 | 810.825 | 807.950 | 808.425 | 809.050 | 808.550 |
| 10 | 768.975 | 772.700 | 773.100 | 811.950 | 810.425 | 812.100 | 808.375 | 809.825 | 809.875 | 809.950 |
| 11 | 770.025 | 774.300 | 773.500 | 813.400 | 812.950 | 812.575 | 809.775 | 813.650 | 810.975 | 811.550 |
| 12 | 775.000 | 778.025 | 776.225 | 813.900 | 813.900 | 794.825 | 812.625 | 793.825 | 792.475 | 812.850 |

| Channel | Group11 | Group 12 | Group 13 | Group 14 | Group 15 | Group 16 | Group 17 | Group 18 | Group 19 | Group 20 |
|---|---|---|---|---|---|---|---|---|---|---|
| | France preferred: User Group C (option 1) | France preferred: User Group C (option 2) | France preferred: User Group C (option 3) | Germany preferred: User Group 1 790-814 MHz | Germany preferred: User Group 2 790-814 MHz | Germany preferred: User Group 3A 790-814 MHz | Germany preferred: User Group 3B 790-814 MHz | Germany preferred: User Group 3C 790-814 MHz | Germany pre-ferred: User Group 3D 790-814 MHz | Germany pre-ferred: User Group 4 790-814 MHz (option 1) |
| 13 | 778.775 | 781.100 | 776.975 | 796.425 | 790.600 | 808.325 | 806.700 | 796.675 | 793.875 | 813.775 |
| 14 | 780.700 | 782.300 | 780.000 | 797.400 | 805.500 | 811.350 | 810.875 | 797.650 | 794.975 | 799.400 |
| 15 | 783.000 | 784.975 | 781.900 | 797.900 | 805.900 | | 811.400 | 809.000 | 795.500 | 810.525 |
| 16 | 797.500 | 786.775 | 784.225 | 800.750 | 808.800 | | 813.600 | 810.925 | 796.725 | |
| 17 | 797.900 | 797.900 | 788.700 | | | | | | | |
| 18 | 799.000 | 800.225 | 802.025 | | | | | | | |
| 19 | 805.100 | 804.000 | 804.700 | | | | | | | |
| 20 | 806.300 | 805.100 | 805.100 | | | | | | | |
| 21 | 808.225 | 807.000 | 805.900 | | | | | | | |
| 22 | 808.975 | 808.225 | 810.025 | | | | | | | |
| 23 | 810.775 | 812.700 | 812.000 | | | | | | | |
| 24 | 813.100 | 813.500 | 813.500 | | | | | | | |
| 25 | 746.775 | 744.225 | 752.975 | | | | | | | |
| 26 | 749.100 | 748.700 | 754.025 | | | | | | | |
| 27 | 752.225 | 749.100 | 756.700 | | | | | | | |
| 28 | 754.775 | 752.225 | 774.300 | | | | | | | |
| 29 | 756.700 | 754.775 | 782.300 | | | | | | | |
| 30 | 764.000 | 764.000 | 788.000 | | | | | | | |
| 31 | 782.300 | 768.225 | 789.100 | | | | | | | |
| 32 | 784.225 | 772.000 | 789.900 | | | | | | | |
| 33 | 784.975 | 780.700 | 792.975 | | | | | | | |
| 34 | 788.000 | 791.000 | 802.775 | | | | | | | |
| 35 | 792.225 | 794.025 | 806.300 | | | | | | | |
| 36 | 813.900 | 794.775 | 810.775 | | | | | | | |

| Channel | Group 21 | Group 22 | Group 23 | Group 24 | Group 25 | Group 26 | Group 27 | Group 28 | Group 29 | Group 30 | Group 31 | Group 32 | Group 33 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Germany preferred: User Group 4 790-814 MHz (option 2) | Germany preferred: Fixed Installa-tions 742-790 MHz | Opti-mized: TV oh. 55 742-750 MHz | Opti-mized: TV oh. 56 750-758 MHz | Opti-mized: TV oh. 57 758-766 MHz | Opti-mized: TV oh. 58 766-774 MHz | Opti-mized: TV oh. 59 774-782 MHz | Broad-casters preferred: TV oh. 60 782-790 MHz | Opti-mized: TV oh. 61 790-798 MHz | Opti-mized: TV oh. 62 798-806 MHz | Nether-lands preferred: TV oh. 63 806-814 MHz | Combined UHF-R Q5 and R9: max. # of compatible | Combined UHF-R Q5 and R9: max. # of compatible |
| 1 | 790.925 | 742.750 | 742.100 | 750.100 | 758.100 | 766.100 | 774.100 | 782.225 | 790.100 | 798.100 | 806.100 | 742.000 | 740.175 |
| 2 | 791.400 | 744.625 | 742.925 | 750.925 | 758.925 | 766.925 | 774.925 | 782.650 | 790.925 | 798.925 | 806.925 | 743.200 | 740.900 |
| 3 | 792.625 | 745.100 | 743.525 | 751.525 | 759.525 | 767.525 | 775.525 | 783.900 | 791.525 | 799.525 | 807.525 | 743.850 | 742.300 |
| 4 | 795.025 | 745.975 | 744.575 | 752.575 | 760.575 | 768.575 | 776.575 | 784.625 | 792.575 | 800.575 | 808.575 | 744.800 | 742.850 |
| 5 | 795.650 | 747.650 | 745.900 | 753.900 | 761.900 | 769.900 | 777.900 | 785.775 | 793.900 | 801.900 | 809.900 | 748.175 | 743.975 |
| 6 | 797.050 | 748.225 | 747.650 | 755.650 | 763.650 | 771.650 | 779.650 | 786.400 | 795.650 | 803.650 | 811.650 | 748.650 | 746.550 |
| 7 | 802.000 | 753.225 | 748.050 | 756.050 | 764.050 | 772.050 | 780.050 | 787.325 | 796.050 | 804.050 | 812.050 | 749.500 | 747.550 |
| 8 | 803.575 | 754.750 | 749.200 | 757.200 | 765.200 | 773.200 | 781.200 | 787.850 | 797.200 | 805.200 | 813.200 | 751.250 | 751.525 |
| 9 | 805.750 | 755.950 | 749.900 | 757.900 | 765.900 | 773.900 | 781.900 | 788.675 | 797.900 | 805.900 | 813.900 | 752.750 | 751.925 |
| 10 | 810.300 | 759.350 | 746.600 | 754.600 | 762.600 | 770.600 | 778.600 | | 794.600 | 802.600 | 810.600 | 758.025 | 765.325 |
| 11 | 811.050 | 762.275 | | | | | | | | | | 760.925 | 766.550 |
| 12 | 812.850 | 770.100 | | | | | | | | | | 770.900 | 767.425 |
| 13 | 813.775 | 774.375 | | | | | | | | | | 774.450 | 773.025 |
| 14 | 799.400 | 775.775 | | | | | | | | | | 776.400 | 773.525 |
| 15 | 808.550 | 777.500 | | | | | | | | | | 777.475 | 776.625 |
| 16 | | 779.750 | | | | | | | | | | 778.875 | 777.950 |
| 17 | | 782.550 | | | | | | | | | | 783.075 | 781.950 |
| 18 | | 784.475 | | | | | | | | | | 796.800 | 783.775 |
| 19 | | 785.975 | | | | | | | | | | 797.975 | 798.600 |
| 20 | | 787.050 | | | | | | | | | | 804.325 | 804.250 |
| 21 | | 788.350 | | | | | | | | | | 806.225 | 808.800 |
| 22 | | 788.875 | | | | | | | | | | 741.200 | 748.175 |
| 23 | | 743.500 | | | | | | | | | | 773.450 | 752.600 |
| 24 | | 772.075 | | | | | | | | | | 775.700 | 770.875 |
| 25 | | 755.450 | | | | | | | | | | 810.100 | 778.900 |
| 26 | | 756.750 | | | | | | | | | | 745.475 | 783.375 |
| 27 | | 770.825 | | | | | | | | | | 754.900 | 766.125 |
| 28 | | 772.725 | | | | | | | | | | 762.625 | 771.775 |
| 29 | | 776.450 | | | | | | | | | | 768.825 | 786.450 |
| 30 | | 789.875 | | | | | | | | | | 783.575 | 802.075 |
| 31 | | 760.000 | | | | | | | | | | 797.575 | 812.900 |
| 32 | | 783.925 | | | | | | | | | | 755.525 | 745.950 |
| 33 | | | | | | | | | | | | 756.650 | 749.375 |
| 34 | | | | | | | | | | | | 758.975 | 763.475 |
| 35 | | | | | | | | | | | | 781.700 | 788.125 |
| 36 | | | | | | | | | | | | 807.675 | 800.900 |

| Channel | Full Range max. # of compatible frequencies (option 1) | Full Range max. # of compatible frequencies (option 2) | Full Range max. # of compatible frequencies (option 3) | Full Range max. # of compatible frequencies (option 4) | Optimized: TV oh. 61-63 & TV oh. 67-69 & EU harmonized: 790-814 & 838-862 MHz & 863-865 MHz | Optimized: TV oh. 61-63 & TV oh. 69 & EU harmonized: 790-814 & 854-862 MHz & 863-865 MHz | Germany preferred: User Group 4 790-814 MHz & 838-865 MHz (only indoor) | Germany preferred: User Group 4 790-814 MHz & 854-865 MHz (indoor and outdoor) | Germany preferred: User Group 3A 790-814 MHz & 838-865 MHz | Germany preferred: User Group 3B 790-814 MHz & 838-865 MHz | Germany preferred: User Group 3C 790-814 MHz & 838-865 MHz |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Group 1 | Group 2 | Group 3 | Group 4 | Group 5 | Group 6 | Group 7 | Group 8 | Group 9 | Group 10 | Group 11 |
| 1 | 790.650 | 791.300 | 790.725 | 790.525 | 790.175 | 790.525 | 792.550 | 792.625 | 790.250 | 791.950 | 790.350 |
| 2 | 791.900 | 792.050 | 791.825 | 791.125 | 793.025 | 791.775 | 794.000 | 793.175 | 792.325 | 793.775 | 791.300 |
| 3 | 794.200 | 793.225 | 792.500 | 791.925 | 793.425 | 792.400 | 794.525 | 794.025 | 792.900 | 794.875 | 794.925 |
| 4 | 795.275 | 793.875 | 794.950 | 794.025 | 798.225 | 793.550 | 797.200 | 795.625 | 793.725 | 798.300 | 796.675 |
| 5 | 795.975 | 795.375 | 795.375 | 795.850 | 799.100 | 796.150 | 799.400 | 797.750 | 794.825 | 800.950 | 800.425 |
| 6 | 797.425 | 798.050 | 796.900 | 798.125 | 799.600 | 797.100 | 801.200 | 801.225 | 799.200 | 806.300 | 805.650 |
| 7 | 797.975 | 798.475 | 801.725 | 801.725 | 800.675 | 803.025 | 802.175 | 805.100 | 799.900 | 806.700 | 806.350 |
| 8 | 802.175 | 800.925 | 802.675 | 802.750 | 801.325 | 804.500 | 805.750 | 807.425 | 804.100 | 808.375 | 808.425 |
| 9 | 803.725 | 805.425 | 803.975 | 803.225 | 805.975 | 805.000 | 809.125 | 810.100 | 810.825 | 811.400 | 809.000 |
| 10 | 804.650 | 806.700 | 804.750 | 809.975 | 809.900 | 807.225 | 811.575 | 810.525 | 812.100 | 812.150 | 809.825 |
| 11 | 808.600 | 809.050 | 809.275 | 816.025 | 810.875 | 810.525 | 812.825 | 811.600 | 812.575 | 813.600 | 811.450 |
| 12 | 814.550 | 812.050 | 817.225 | 818.000 | 813.450 | 812.100 | 813.250 | 813.300 | 839.200 | 838.300 | 839.300 |
| 13 | 817.550 | 823.825 | 820.550 | 818.575 | 838.175 | 813.450 | 840.625 | 854.950 | 839.900 | 840.375 | 840.425 |
| 14 | 823.625 | 825.000 | 823.175 | 819.375 | 838.975 | 854.325 | 841.425 | 856.625 | 840.325 | 840.950 | 841.825 |
| 15 | 828.275 | 826.550 | 827.825 | 821.500 | 840.125 | 854.975 | 843.725 | 857.475 | 842.825 | 841.775 | 843.450 |
| 16 | 829.100 | 829.700 | 829.375 | 822.400 | 841.875 | 855.900 | 845.100 | 857.950 | 844.100 | 843.400 | 849.000 |
| 17 | 830.625 | 831.500 | 829.875 | 828.575 | 843.225 | 857.700 | 845.800 | 859.050 | 846.250 | 846.700 | 852.675 |
| 18 | 831.625 | 832.550 | 830.625 | 829.250 | 847.975 | 858.850 | 848.525 | 859.725 | 847.200 | 847.950 | 853.650 |
| 19 | 833.275 | 842.775 | 834.825 | 830.275 | 850.975 | 860.750 | 849.125 | 861.175 | 856.900 | 855.950 | 858.925 |
| 20 | 833.875 | 844.100 | 842.650 | 835.075 | 851.475 | 863.175 | 853.800 | 861.750 | 857.725 | 856.950 | 859.450 |
| 21 | 841.575 | 846.575 | 844.050 | 843.050 | 853.125 | 864.000 | 855.400 | 791.450 | 860.100 | 860.150 | 860.675 |
| 22 | 846.050 | 851.125 | 845.900 | 851.975 | 855.625 | 864.475 | 857.950 | 801.950 | 795.350 | 860.625 | 793.825 |
| 23 | 851.950 | 853.475 | 853.025 | 852.800 | 857.475 | 792.825 | 859.650 | 805.775 | 807.200 | 791.250 | 801.000 |
| 24 | 855.900 | 857.750 | 855.000 | 855.125 | 861.475 | 795.750 | 861.150 | 863.525 | 807.900 | 795.400 | 806.750 |
| 25 | 856.825 | 858.525 | 855.600 | 856.475 | 863.775 | 805.750 | 795.700 | 864.200 | 811.350 | 797.600 | 813.650 |
| 26 | 858.425 | 858.950 | 856.725 | 856.975 | 864.175 | 806.300 | 800.625 | | 856.325 | 808.950 | 854.350 |
| 27 | 859.050 | 860.725 | 859.050 | 858.025 | 864.825 | 807.875 | 810.100 | | 859.350 | 854.700 | 857.825 |
| 28 | 860.550 | 863.350 | 859.450 | 861.575 | 790.800 | 810.975 | 810.550 | | 860.575 | 859.400 | 861.650 |
| 29 | 863.400 | 863.900 | 863.625 | 863.625 | 794.350 | 811.700 | 839.475 | | 863.100 | 863.125 | 863.250 |
| 30 | 863.825 | 864.875 | 864.350 | 864.325 | 794.775 | 857.225 | 849.925 | | 863.675 | 863.750 | |
| 31 | 864.625 | 794.775 | 801.000 | 792.450 | 804.225 | 861.300 | 854.950 | | 864.475 | 864.825 | |
| 32 | 799.275 | 799.800 | 822.000 | 827.450 | 805.400 | | 857.200 | | | | |
| 33 | 822.150 | 825.575 | 827.200 | 845.000 | 806.800 | | 863.200 | | | | |
| 34 | 830.225 | 827.075 | 860.975 | 845.600 | 808.600 | | 863.675 | | | | |
| 35 | 847.400 | 845.700 | 864.875 | 794.775 | 811.475 | | | | | | |
| 36 | 807.375 | 855.450 | 791.425 | 795.175 | 840.800 | | | | | | |
| 37 | 810.825 | 811.600 | 803.425 | 806.125 | 843.850 | | | | | | |
| 38 | 815.825 | 813.825 | 808.825 | 809.225 | 844.275 | | | | | | |
| 39 | 816.300 | 819.850 | 834.400 | 811.875 | 849.325 | | | | | | |
| 40 | 820.250 | 841.075 | 840.050 | 813.275 | 860.725 | | | | | | |
| 41 | 821.050 | 845.100 | 851.950 | 830.700 | | | | | | | |
| 42 | 839.850 | 847.800 | 861.800 | 831.725 | | | | | | | |
| 43 | 842.400 | 813.400 | 807.475 | 834.425 | | | | | | | |
| 44 | 843.925 | 816.725 | 822.425 | 843.750 | | | | | | | |
| 45 | 845.150 | 818.975 | 835.800 | 847.250 | | | | | | | |
| 46 | 846.625 | 840.675 | 840.500 | 848.375 | | | | | | | |
| 47 | 853.775 | 856.100 | 843.525 | 849.900 | | | | | | | |

| Channel | Germany preferred: User Group 3D 790-814 MHz & 838-865 MHz | Germany preferred: User Group 2 790-814 MHz & 838-862 MHz | Germany preferred: User Group 1 790-814 MHz & 838-862 MHz | France pre-ferred: User Group A (option 1) | France pre-ferred: User Group A (option 2) | France pre-ferred: User Group B (option 1) | France pre-ferred: User Group B (option 2) | France pre-ferred: User Group C (option 1) | France pre-ferred: User Group C (option 2) | Optimized: TV oh. 61 790-798 MHz | Optimized: TV oh. 62 798-806 MHz |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Group 12 | Group 13 | Group 14 | Group 15 | Group 16 | Group 17 | Group 18 | Group 19 | Group 20 | Group 21 | Group 22 |
| 1 | 790.400 | 790.100 | 791.050 | 791.500 | 790.750 | 790.500 | 792.775 | 790.300 | 791.000 | 790.100 | 798.100 |
| 2 | 791.350 | 793.325 | 792.175 | 792.500 | 791.750 | 792.025 | 794.225 | 791.000 | 794.775 | 790.925 | 798.925 |
| 3 | 794.975 | 794.425 | 792.750 | 793.750 | 793.250 | 794.225 | 794.975 | 792.975 | 797.100 | 791.525 | 799.525 |
| 4 | 796.725 | 796.950 | 795.200 | 795.250 | 793.750 | 794.975 | 796.900 | 797.100 | 797.500 | 792.575 | 800.575 |
| 5 | 800.475 | 797.900 | 796.425 | 795.750 | 794.500 | 796.900 | 798.100 | 797.900 | 798.300 | 793.900 | 801.900 |
| 6 | 805.700 | 800.050 | 799.750 | 800.500 | 799.500 | 797.300 | 798.500 | 800.975 | 802.775 | 795.650 | 803.650 |
| 7 | 806.400 | 806.100 | 802.675 | 801.250 | 801.750 | 801.500 | 801.500 | 806.300 | 808.975 | 796.050 | 804.050 |
| 8 | 808.475 | 807.575 | 805.400 | 807.750 | 808.500 | 809.500 | 806.500 | 813.500 | 813.100 | 797.200 | 805.200 |
| 9 | 809.050 | 808.050 | 806.100 | 811.250 | 817.750 | 812.900 | 810.975 | 818.025 | 820.000 | 797.900 | 805.900 |
| 10 | 809.875 | 808.800 | 811.950 | 819.500 | 820.250 | 821.300 | 822.100 | 820.000 | 822.300 | 794.600 | 802.600 |
| 11 | 811.500 | 813.500 | 813.400 | 822.750 | 823.250 | 822.500 | 824.025 | 822.300 | 823.000 | | |
| 12 | 839.350 | 838.100 | 838.100 | 824.500 | 823.750 | 826.225 | 826.225 | 824.975 | 824.225 | | |
| 13 | 840.475 | 840.050 | 838.500 | 825.750 | 826.500 | 826.975 | 826.975 | 828.000 | 828.000 | | |
| 14 | 841.875 | 840.800 | 843.950 | 827.250 | 827.500 | 828.500 | 829.300 | 828.700 | 829.100 | | |
| 15 | 843.500 | 843.825 | 851.200 | 828.250 | 828.250 | 828.900 | 829.700 | 829.100 | 829.500 | | |
| 16 | 849.050 | 844.250 | 852.425 | 790.750 | 795.500 | 798.500 | 805.300 | 792.225 | 790.300 | | |
| 17 | 852.725 | 846.100 | 853.400 | 798.750 | 802.500 | 802.975 | 809.500 | 796.700 | 807.000 | | |
| 18 | 853.700 | 849.325 | 854.100 | 799.500 | 803.750 | 810.225 | 812.900 | 800.225 | 812.700 | | |
| 19 | 858.975 | 853.900 | 856.175 | 809.250 | 806.750 | 813.300 | 813.300 | 812.700 | 814.300 | | |
| 20 | 859.500 | 859.825 | 856.750 | 810.500 | 811.500 | 814.500 | 814.100 | 816.975 | 816.225 | | |
| 21 | 860.725 | 860.950 | 857.575 | 812.250 | 814.750 | 816.775 | 822.500 | 826.025 | 824.975 | | |
| 22 | 793.875 | 861.500 | 858.675 | 815.750 | 815.500 | 863.150 | 863.125 | 863.150 | 863.125 | | |
| 23 | 801.050 | 790.600 | 797.900 | 816.500 | 816.500 | 863.550 | 863.525 | 863.550 | 863.525 | | |
| 24 | 806.800 | 791.575 | 807.050 | 817.750 | 818.500 | 864.175 | 864.175 | 864.175 | 864.175 | | |
| 25 | 813.700 | 792.800 | 807.750 | 823.500 | 819.750 | 864.600 | 864.625 | 864.600 | 864.625 | | |
| 26 | 854.400 | 811.250 | 859.200 | 863.150 | 825.250 | | | | | | |
| 27 | 857.875 | 811.825 | 861.400 | 863.550 | 863.125 | | | | | | |
| 28 | 861.700 | 812.950 | | 864.175 | 863.525 | | | | | | |
| 29 | 863.300 | 855.575 | | 864.600 | 864.175 | | | | | | |
| 30 | | 856.050 | | | 864.625 | | | | | | |
| 31 | | 859.250 | | | | | | | | | |

| Channel | Netherlands preferred: TV Ch. 63 806-814 MHz (option 1) | Netherlands preferred: TV Ch. 63 806-814 MHz (option 2) | Optimized: TV Ch. 61-63 790-814 MHz | FIN preferred: 790-822 MHz (option 1) | FIN preferred: 790-822 MHz (option 2) | Sweden preferred: 800-814 MHz (option 1) | Sweden preferred: 800-814 MHz (option 2) | NOR / DEN preferred: 800-820 MHz | Optimized TV channels: TV Ch. 67 838-846 MHz | Optimized TV channels: TV Ch. 68 846-854 MHz |
|---|---|---|---|---|---|---|---|---|---|---|
| | Group 23 | Group 24 | Group 25 | Group 26 | Group 27 | Group 28 | Group 29 | Group 30 | Group 31 | Group 32 |
| 1 | 806.100 | 806.100 | 790.150 | 790.775 | 790.675 | 800.300 | 800.125 | 800.325 | 838.100 | 846.100 |
| 2 | 806.925 | 806.800 | 791.200 | 791.175 | 791.825 | 800.700 | 801.125 | 801.800 | 838.925 | 846.925 |
| 3 | 807.525 | 807.950 | 794.200 | 792.125 | 792.575 | 801.975 | 803.125 | 802.200 | 839.525 | 847.525 |
| 4 | 808.575 | 808.350 | 795.375 | 792.650 | 794.225 | 802.500 | 803.775 | 802.950 | 840.575 | 848.575 |
| 5 | 809.900 | 810.100 | 796.875 | 794.325 | 794.875 | 804.075 | 805.675 | 805.825 | 841.900 | 849.900 |
| 6 | 811.650 | 811.425 | 797.825 | 801.550 | 796.925 | 806.950 | 807.050 | 807.950 | 843.650 | 851.650 |
| 7 | 812.050 | 812.475 | 801.650 | 802.400 | 800.325 | 808.325 | 809.925 | 810.475 | 844.050 | 852.050 |
| 8 | 813.200 | 813.075 | 803.350 | 805.200 | 805.550 | 810.225 | 811.500 | 811.075 | 845.200 | 853.200 |
| 9 | 813.900 | 813.900 | 806.125 | 806.450 | 806.800 | 810.875 | 812.025 | 812.450 | 845.900 | 853.900 |
| 10 | 810.600 | 809.400 | 808.675 | 811.675 | 809.600 | 812.875 | 813.300 | 814.825 | 842.600 | 850.600 |
| 11 | | | 809.425 | 815.075 | 810.450 | 813.875 | 813.700 | 817.800 | | |
| 12 | | | 811.550 | 817.125 | 817.675 | 803.450 | 804.925 | 818.300 | | |
| 13 | | | 812.950 | 817.775 | 819.350 | 809.075 | 810.550 | 819.575 | | |
| 14 | | | 813.350 | 819.425 | 819.875 | | | 800.850 | | |
| 15 | | | 790.775 | 820.175 | 820.825 | | | 804.600 | | |
| 16 | | | 794.900 | 821.325 | 821.225 | | | 813.250 | | |
| 17 | | | 805.275 | 794.800 | 795.325 | | | 816.675 | | |
| 18 | | | 806.750 | 799.400 | 797.425 | | | | | |
| 19 | | | 807.600 | 799.900 | 801.750 | | | | | |
| 20 | | | 810.375 | 804.200 | 802.775 | | | | | |
| 21 | | | | 807.375 | 804.625 | | | | | |
| 22 | | | | 809.225 | 807.800 | | | | | |
| 23 | | | | 810.250 | 812.100 | | | | | |
| 24 | | | | 814.575 | 812.600 | | | | | |
| 25 | | | | 816.675 | 817.200 | | | | | |

| Channel | BEL / TUR / UK preferred: TV Ch. 69 & EU harmonized 854-862 & 863-865 MHz | Optimized: TV Ch. 67-69 & EU harmonized 838-862 & 863-865 MHz | U.K. preferred: “Ch. 69 Co-ordinate frequencies SET 1” | U.K. preferred: “Ch. 69 Co-ordinate frequencies SET 2” | U.K. preferred: “Ch. 69 Co-ordinated frequencies INDOORS” | U.K. preferred: “Ch. 69 Co-ordinated frequencies OUTDOORS” | U.K. preferred: “Ch. 69 Shared frequencies” (option 1) | U.K. preferred: “Ch. 69 Shared frequencies” (option 2) | EU harmonized band: optimized for 863 - 865 MHz | Combined UHF-R Q5 and R9: max. # of compatible (option 1) | Combined UHF-R Q5 and R9: max. # of compatible (option 2) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Group 33 | Group 34 | Group 35 | Group 36 | Group 37 | Group 38 | Group 39 | Group 40 | Group 41 | Group 42 | Group 43 |
| 1 | 854.225 | 838.650 | 855.675 | 856.500 | 854.500 | 854.375 | 854.900 | 855.275 | 863.125 | 791.925 | 796.050 |
| 2 | 855.525 | 840.225 | 856.375 | 857.500 | 855.000 | 854.850 | 855.900 | 855.900 | 863.525 | 793.425 | 796.900 |
| 3 | 855.925 | 841.325 | 856.800 | 858.250 | 855.900 | 855.725 | 856.575 | 857.950 | 864.175 | 796.250 | 798.025 |
| 4 | 856.550 | 843.700 | 857.425 | 858.700 | 856.600 | 856.400 | 857.950 | 858.650 | 864.625 | 802.725 | 803.000 |
| 5 | 857.950 | 845.000 | 860.600 | 859.525 | 857.100 | 856.850 | 858.650 | 860.400 | | 808.450 | 806.700 |
| 6 | 859.550 | 850.675 | | | 857.850 | 857.625 | 860.400 | 860.900 | | 809.450 | 811.825 |
| 7 | 860.725 | 852.675 | | | 858.900 | 858.625 | 861.200 | 861.750 | | 811.450 | 812.250 |
| 8 | 861.450 | 853.250 | | | 859.500 | 859.950 | 861.750 | | | 823.200 | 815.125 |
| 9 | 864.050 | 855.150 | | | 860.475 | 860.650 | | | | 824.350 | 828.625 |
| 10 | 864.550 | 856.050 | | | 860.925 | 861.075 | | | | 826.800 | 829.500 |
| 11 | 854.750 | 859.225 | | | 861.700 | 861.900 | | | | 828.075 | 836.825 |
| 12 | | 860.625 | | | | | | | | 830.800 | 838.400 |
| 13 | | 863.600 | | | | | | | | 837.000 | 840.425 |
| 14 | | 864.400 | | | | | | | | 839.275 | 846.975 |
| 15 | | 864.800 | | | | | | | | 840.850 | 847.525 |
| 16 | | 838.250 | | | | | | | | 850.675 | 848.725 |
| 17 | | 839.625 | | | | | | | | 851.175 | 851.800 |
| 18 | | 843.275 | | | | | | | | 852.850 | 853.925 |
| 19 | | 847.500 | | | | | | | | 854.250 | 857.425 |
| 20 | | 854.475 | | | | | | | | 857.125 | 861.125 |
| 21 | | 857.325 | | | | | | | | 864.475 | 863.475 |
| 22 | | | | | | | | | | 831.375 | 803.525 |
| 23 | | | | | | | | | | 852.175 | 825.125 |
| 24 | | | | | | | | | | 858.975 | 830.800 |
| 25 | | | | | | | | | | 863.300 | 853.250 |
| 26 | | | | | | | | | | 805.700 | 863.900 |
| 27 | | | | | | | | | | 834.350 | 823.975 |
| 28 | | | | | | | | | | 835.175 | 831.900 |
| 29 | | | | | | | | | | 835.575 | 839.300 |
| 30 | | | | | | | | | | 848.800 | 860.075 |
| 31 | | | | | | | | | | 861.825 | 864.550 |
| 32 | | | | | | | | | | 791.075 | 791.525 |
| 33 | | | | | | | | | | 794.225 | 817.550 |
| 34 | | | | | | | | | | 823.925 | 825.775 |
| 35 | | | | | | | | | | 848.300 | 832.425 |
| 36 | | | | | | | | | | 861.025 | 855.125 |

| Channel | L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 |
|---|---|---|---|---|---|---|---|---|
| A1 | 779.125 | 779.250 | 779.625 | 779.750 | 780.625 | 780.250 | 779.125 | 782.875 |
| A2 | 779.375 | 779.500 | 779.875 | 780.500 | 781.125 | | 779.375 | 783.000 |
| A3 | 780.125 | 780.000 | 780.375 | 781.000 | 781.375 | | 779.875 | 783.125 |
| A4 | 780.750 | 780.875 | 781.250 | 782.125 | 781.750 | | 780.500 | 783.250 |
| A5 | 782.000 | 781.500 | 781.625 | 782.375 | 782.625 | | 781.500 | 783.375 |
| A6 | 782.500 | 781.875 | 782.250 | 782.750 | | | 782.375 | 783.500 |
| A7 | | | | | | | 782.750 | |
| 1 | 797.125 | 797.250 | 797.625 | 797.750 | 798.625 | 798.250 | 797.125 | 800.875 |
| 2 | 797.375 | 797.500 | 797.875 | 798.500 | 799.125 | | 797.375 | 801.000 |
| 3 | 798.125 | 798.000 | 798.375 | 799.000 | 799.375 | | 797.875 | 801.125 |
| 4 | 798.750 | 798.875 | 799.250 | 800.125 | 799.750 | | 798.500 | 801.250 |
| 5 | 800.000 | 799.500 | 799.625 | 800.375 | 800.625 | | 799.500 | 801.375 |
| 6 | 800.500 | 799.875 | 800.250 | 800.750 | | | 800.375 | 801.500 |
| 7 | | | | | | | 800.750 | |

| Channel | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 |
|---|---|---|---|---|---|---|---|---|
| A1 | 783.625 | 783.750 | 784.125 | 784.250 | 785.125 | 784.750 | 783.625 | 787.375 |
| A2 | 783.875 | 784.000 | 784.375 | 785.000 | 785.625 | | 783.875 | 787.500 |
| A3 | 784.625 | 784.500 | 784.875 | 785.500 | 785.875 | | 784.375 | 787.625 |
| A4 | 785.250 | 785.375 | 785.750 | 786.625 | 786.250 | | 785.000 | 787.750 |
| A5 | 786.500 | 786.000 | 786.125 | 786.875 | 787.125 | | 786.000 | 787.875 |
| A6 | | 786.375 | 786.750 | 787.250 | | | 786.875 | |
| A7 | | | | | | | 787.250 | |
| 1 | 801.625 | 801.750 | 802.125 | 802.250 | 803.125 | 802.750 | 801.625 | 805.375 |
| 2 | 801.875 | 802.000 | 802.375 | 803.000 | 803.625 | | 801.8 75 | 805.500 |
| 3 | 802.625 | 802.500 | 802.875 | 803.500 | 803.875 | | 802.375 | 805.625 |
| 4 | 803.250 | 803.375 | 803.750 | 804.625 | 804.250 | | 803.000 | 805.750 |
| 5 | 804.500 | 804.000 | 804.125 | 804.875 | 805.125 | | 804.000 | 805.875 |
| 6 | 805.000 | 804.375 | 804.750 | 805.250 | | | 804.875 | |
| 7 | | | | | | | 805.250 | |

| Channel | C1 | C2 | C3 | C4 | C5 | C6 | C7 | C8 | C9 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 779.125 | 779.500 | 779.250 | 779.500 | 779.125 | 779.250 | 779.250 | 779.250 | 779.500 |
| 2 | 779.375 | 779.875 | 779.750 | 780.000 | 779.375 | 779.500 | 780.000 | 780.750 | 780.250 |
| 3 | 780.875 | 782.375 | 780.500 | 780.750 | 780.125 | 780.000 | 780.500 | 781.625 | 780.750 |
| 4 | 781.875 | 784.125 | 782.000 | 782.250 | 781.625 | 781.375 | 781.500 | 782.000 | 781.750 |
| 5 | 783.750 | 786.500 | 782.625 | 784.000 | 783.625 | 782.500 | 781.875 | 783.625 | 782.125 |
| 6 | 786.125 | 787.500 | 783.750 | 785.375 | 784.250 | 783.375 | 784.000 | 784.250 | 784.250 |
| 7 | 787.250 | 787.750 | 785.750 | 786.000 | 785.375 | 784.875 | 785.625 | 785.375 | 785.875 |
| 8 | | | 786.750 | 787.000 | 786.625 | 786.125 | 786.750 | 786.750 | 787.000 |
| 9 | | | | | 787.000 | 786.500 | 787.375 | 787.250 | 787.625 |
| 10 | | | | | 787.500 | 787.125 | 787.625 | 787.500 | 787.875 |

| Channel | E1 | E2 | E3 | E4 | E5 | E6 | E7 | E8 | E9 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 797.125 | 797.500 | 797.250 | 797.500 | 797.125 | 797.250 | 797.250 | 797.250 | 797.500 |
| 2 | 797.375 | 797.875 | 797.750 | 798.000 | 797.375 | 797.500 | 798.000 | 798.750 | 798.250 |
| 3 | 798.875 | 800.375 | 798.500 | 798.750 | 798.125 | 798.000 | 798.500 | 799.625 | 798.750 |
| 4 | 799.875 | 802.125 | 800.000 | 800.250 | 799.625 | 799.375 | 799.500 | 800.000 | 799.750 |
| 5 | 801.750 | 804.500 | 800.625 | 802.000 | 801.625 | 800.500 | 799.875 | 801.625 | 800.125 |
| 6 | 804.125 | 805.500 | 801.750 | 803.375 | 802.250 | 801.375 | 802.000 | 802.250 | 802.250 |
| 7 | 805.250 | 805.750 | 803.750 | 804.000 | 803.375 | 802.875 | 803.625 | 803.375 | 803.875 |
| 8 | | | 804.750 | 805.000 | 804.625 | 804.125 | 804.750 | 804.750 | 805.000 |
| 9 | | | | | 805.000 | 804.500 | 805.375 | 805.250 | 805.625 |
| 10 | | | | | 805.500 | 805.125 | 805.625 | 805.500 | 805.875 |

| Channel | F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 | F9 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 797.125 | 797.250 | 799.000 | 797.625 | 797.375 | 797.125 | 797.375 | 797.250 | 797.125 |
| 2 | 797.875 | 797.500 | 800.125 | 798.000 | 797.750 | 797.375 | 797.625 | 797.500 | 797.500 |
| 3 | 798.250 | 798.750 | 801.500 | 799.000 | 798.875 | 797.750 | 798.875 | 797.875 | 799.125 |
| 4 | 799.750 | 799.500 | 803.500 | 800.250 | 801.625 | 798.750 | 799.250 | 799.625 | 800.125 |
| 5 | 801.875 | 802.250 | 804.250 | 802.000 | 804.125 | 799.875 | 800.250 | 801.000 | 802.000 |
| 6 | 802.875 | 802.750 | 805.875 | 803.500 | | 801.375 | 801.000 | 802.250 | 804.250 |
| 7 | 804.250 | 805.125 | | | | 803.625 | 803.000 | 803.875 | 804.750 |
| 8 | | | | | | 804.375 | 805.250 | 805.000 | 805.500 |
| 9 | | | | | | 804.875 | | 805.875 | |

## JBX FREQUENCY BAND (806.125 - 809.750 MHz)

| Channel | Group 1 | Group 2 | Group 3 | Group 4 | Group 5 | Group 6 | Group 7 |
|---|---|---|---|---|---|---|---|
| 1 | 806.125 | 806.250 | 806.625 | 806.750 | 807.625 | 807.250 | 806.125 |
| 2 | 806.375 | 806.500 | 806.875 | 807.500 | 808.125 | | 806.375 |
| 3 | 807.125 | 807.000 | 807.375 | 808.000 | 808.375 | | 806.875 |
| 4 | 807.750 | 807.875 | 808.250 | 809.125 | 808.750 | | 807.500 |
| 5 | 809.000 | 808.500 | 808.625 | 809.375 | 809.625 | | 808.500 |
| 6 | 809.500 | 808.875 | 809.250 | 809.750 | | | 809.375 |
| 7 | | | | | | | 809.750 |

| Channel | F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 | F9 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | | | | | | | | |
| 5 | | | | | | | | | |
| 6 | | | | | 806.125 | | | | |
| 7 | | | 806.375 | 807.000 | 806.375 | | | | |
| 8 | 806.250 | 807.625 | 808.125 | 807.250 | 807.125 | | | | |
| 9 | 806.750 | 808.750 | 809.000 | 807.750 | 807.750 | | 806.125 | | 808.000 |
| 10 | 809.500 | 809.375 | 809.375 | 808.875 | 809.000 | 806.750 | 808.500 | 806.875 | 808.625 |
| 11 | 809.750 | 809.750 | 809.625 | 809.750 | 809.500 | 808.750 | 809.125 | 808.375 | 809.500 |
| 12 | | | | | | 809.625 | 809.625 | 809.125 | 809.750 |

## Q6 FREQUENCY BAND (740.125 - 751.875 MHz)

| Channel | Group 1 | Group 2 | Group 3 | Group 4 | Group 5 |
|---|---|---|---|---|---|
| 1 | 740.275 | 740.275 | 740.250 | 740.275 | 740.375 |
| 2 | 741.000 | 740.825 | 740.900 | 740.800 | 741.275 |
| 3 | 741.450 | 741.725 | 741.325 | 742.550 | 741.700 |
| 4 | 742.425 | 742.250 | 742.075 | 743.350 | 743.450 |
| 5 | 742.850 | 742.975 | 743.025 | 743.775 | 743.925 |
| 6 | 743.600 | 743.450 | 743.475 | 745.525 | 744.775 |
| 7 | 744.050 | 744.425 | 744.525 | 748.125 | 746.975 |
| 8 | 745.050 | 746.825 | 745.375 | 748.925 | 748.700 |
| 9 | 747.450 | 747.825 | 747.925 | 749.350 | 749.600 |
| 10 | 748.425 | 748.275 | 748.375 | 751.250 | 750.925 |
| 11 | 748.900 | 749.025 | 749.200 | 751.775 | 751.650 |
| 12 | 749.625 | 749.450 | 749.625 | | |
| 13 | 750.150 | 750.425 | 750.250 | | |
| 14 | 751.050 | 750.875 | 751.100 | | |
| 15 | 751.600 | 751.600 | 751.600 | | |

## FREQUENCY BAND G7C (470.125–509.875 MHz)

| Group | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Channel** | **Full Range max. # of compatible frequencies (option 1) 470 - 510 MHz** | **Full Range max. # of compatible frequencies (option 2) 470 - 510 MHz** | **Compatible with Group 3 of L3E (band completely available)** | **Compatible with Group 4 of L3E (band completely available)** | **Compatible with Group 5 of L3E (band completely available)** | **Compatible with Group 6 of L3E (band completely available)** | **Compatible with Group 7 of L3E (band completely available)** | **Compatible with Group 8 of L3E (band completely available)** | **European TV channel 21 optimized 470 - 478 MHz** | **European TV channel 22 optimized 478 - 486 MHz** | **European TV channel 23 optimized 486 - 494 MHz** | **European TV channel 24 optimized 494 - 502 MHz** | **European TV channel 25 optimized 502 - 510 MHz** |
| **1** | 470.200 | 470.250 | 471.525 | 470.125 | 470.200 | 470.700 | 470.475 | 509.450 | 470.125 | 478.125 | 486.125 | 494.125 | 502.125 |
| **2** | 470.750 | 470.700 | 473.175 | 471.050 | 470.550 | 471.650 | 471.025 | 508.900 | 471.375 | 479.375 | 487.375 | 495.375 | 503.375 |
| **3** | 471.950 | 471.325 | 473.600 | 472.400 | 472.025 | 472.250 | 471.875 | 508.050 | 472.000 | 480.000 | 488.000 | 496.000 | 504.000 |
| **4** | 472.300 | 471.675 | 474.575 | 473.075 | 474.600 | 473.350 | 473.025 | 506.900 | 472.825 | 480.825 | 488.825 | 496.825 | 504.825 |
| **5** | 475.600 | 474.150 | 476.950 | 474.850 | 475.600 | 474.725 | 475.300 | 504.625 | 473.350 | 481.350 | 489.350 | 497.350 | 505.350 |
| **6** | 476.450 | 475.450 | 481.050 | 475.675 | 476.325 | 475.500 | 476.300 | 503.625 | 475.800 | 483.800 | 491.800 | 499.800 | 507.800 |
| **7** | 478.650 | 476.325 | 481.725 | 477.600 | 476.800 | 477.475 | 478.075 | 501.850 | 476.225 | 484.225 | 492.225 | 500.225 | 508.225 |
| **8** | 487.725 | 482.975 | 485.375 | 483.275 | 485.975 | 486.050 | 481.775 | 498.150 | 476.950 | 484.950 | 492.950 | 500.950 | 508.950 |
| **9** | 488.400 | 484.600 | 487.975 | 488.675 | 490.125 | 490.275 | 485.925 | 494.000 | 477.875 | 485.875 | 493.875 | 501.875 | 509.875 |
| **10** | 491.575 | 491.150 | 492.200 | 489.250 | 493.875 | 492.600 | 486.325 | 493.600 | 477.300 | 485.300 | 493.300 | 501.300 | 509.300 |
| **11** | 492.675 | 492.325 | 498.075 | 492.675 | 497.000 | 498.575 | 492.025 | 487.900 | | | | | |
| **12** | 496.625 | 498.050 | 501.000 | 497.975 | 502.175 | 501.950 | 498.325 | 481.600 | | | | | |
| **13** | 498.475 | 500.975 | 504.175 | 504.675 | 502.525 | 502.300 | 504.275 | 475.650 | | | | | |
| **14** | 501.000 | 502.900 | 505.425 | 505.150 | 505.125 | 503.525 | 505.025 | 474.900 | | | | | |
| **15** | 502.525 | 504.300 | 506.300 | 505.925 | 506.450 | 507.575 | 505.575 | 474.350 | | | | | |
| **16** | 505.825 | 506.525 | 507.700 | 507.600 | 507.050 | 508.050 | 506.675 | 473.250 | | | | | |
| **17** | 506.200 | 507.025 | 508.750 | 507.950 | 508.700 | 509.025 | 507.600 | 472.325 | | | | | |
| **18** | 507.125 | 508.325 | 509.325 | 509.800 | 509.150 | 509.800 | 509.450 | 470.475 | | | | | |
| **19** | 508.875 | 509.050 | 470.650 | 473.450 | 509.850 | 470.325 | 472.325 | 508.750 | | | | | |
| **20** | 475.200 | 477.825 | 476.375 | 479.175 | 477.475 | 476.975 | 497.125 | 483.950 | | | | | |
| **21** | 503.875 | 478.750 | 483.925 | 495.900 | 479.525 | 481.150 | 500.050 | 481.025 | | | | | |
| **22** | 509.600 | 505.300 | 499.800 | 509.100 | 481.300 | 501.375 | 502.700 | 478.375 | | | | | |
| **23** | 473.475 | 509.375 | 503.550 | 470.700 | 489.275 | 504.375 | 508.750 | 472.325 | | | | | |
| **24** | 477.900 | 475.775 | | | | | | | | | | | |
| **25** | 479.075 | 485.650 | | | | | | | | | | | |
| **26** | 479.925 | 486.400 | | | | | | | | | | | |
| **27** | 490.300 | 487.550 | | | | | | | | | | | |
| **28** | 493.600 | 488.900 | | | | | | | | | | | |
| **29** | 494.200 | 489.250 | | | | | | | | | | | |
| **30** | 495.250 | 491.600 | | | | | | | | | | | |
| **31** | 497.200 | 496.175 | | | | | | | | | | | |
| **32** | 507.450 | 501.850 | | | | | | | | | | | |

## Q10A FREQUENCY BAND (740.125–786.875 MHz)

| Channel | Group 1 | Group 2 | Group 3 | Group 4 | Group 5 | Group 6 | Group 7 | Group 8 | Group 9 | Group 10 | Group 11 | Group 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 740.450 | 740.600 | 740.550 | | 741.350 | 740.550 | 740.300 | | 741.075 | 740.200 | 740.175 | 740.300 |
| **2** | 741.425 | 742.500 | 740.975 | 740.500 | 742.150 | 744.350 | 741.400 | 740.625 | 743.000 | 740.825 | 740.875 | 741.000 |
| **3** | 743.075 | 743.000 | 742.750 | 742.025 | 745.725 | 744.975 | 741.925 | 742.450 | 743.600 | 742.650 | 741.875 | 742.000 |
| **4** | 745.350 | 744.050 | 747.875 | 747.550 | 747.000 | 745.800 | 742.825 | 742.975 | 745.225 | 743.175 | 744.750 | 744.875 |
| **5** | 746.050 | 744.700 | 748.750 | 748.800 | 748.050 | 749.100 | 745.800 | 743.800 | 749.100 | 744.000 | 745.900 | 746.025 |
| **6** | 747.350 | 746.700 | 753.225 | 749.650 | 749.525 | 755.175 | 747.950 | 746.625 | 756.175 | 746.825 | 746.775 | 746.900 |
| **7** | 748.150 | 749.000 | 754.225 | 753.650 | 750.700 | 756.250 | 749.475 | 748.825 | 759.850 | 749.025 | 748.375 | 748.500 |
| **8** | 751.875 | 752.125 | 755.550 | 756.800 | 753.550 | 756.725 | 752.575 | 749.225 | 761.000 | 749.425 | 750.275 | 750.400 |
| **9** | 753.625 | 754.650 | 756.325 | 760.550 | 755.325 | 758.725 | 755.925 | 755.750 | 762.800 | 755.950 | 752.850 | 752.975 |
| **10** | 756.050 | 756.100 | 758.200 | 761.500 | 756.700 | 759.450 | 756.550 | 759.075 | 763.825 | 759.275 | 759.150 | 759.275 |
| **11** | 757.150 | 757.900 | 758.825 | 762.200 | 758.300 | 761.650 | 758.325 | 761.025 | 767.325 | 761.225 | 761.900 | 762.025 |
| **12** | 763.525 | 760.925 | 762.550 | 763.350 | 758.700 | 766.225 | 761.525 | 769.125 | 768.175 | 769.325 | 771.700 | 771.825 |
| **13** | 764.950 | 768.675 | 767.425 | 765.850 | 768.800 | 771.450 | 766.775 | 769.725 | 768.775 | 769.925 | 773.125 | 773.250 |
| **14** | 749.725 | 741.700 | 741.750 | 767.850 | 745.000 | 741.675 | 746.625 | 770.575 | 776.875 | 770.775 | 777.125 | 777.250 |
| **15** | 752.350 | 746.150 | 743.475 | 741.150 | 751.425 | 753.425 | 747.150 | 774.075 | 778.825 | 774.275 | 778.875 | 779.000 |
| **16** | 754.650 | 747.950 | 746.650 | 744.200 | 757.375 | 754.425 | 750.750 | 775.100 | 782.150 | 775.300 | 780.425 | 780.550 |
| **17** | 756.750 | 756.850 | 751.350 | 746.100 | 759.650 | 760.425 | 753.775 | 776.900 | | 777.100 | 781.725 | 781.850 |
| **18** | 761.400 | 758.700 | 751.925 | 752.525 | 760.325 | 772.225 | 757.775 | 778.050 | | 778.250 | 782.325 | 782.450 |
| **19** | 762.675 | 759.250 | 753.625 | 754.400 | 764.400 | | 759.825 | 781.725 | | 781.925 | 784.850 | 784.975 |
| **20** | | 761.975 | | 755.775 | 779.675 | | 776.575 | | | | 785.350 | 785.475 |
| **21** | | | | 766.975 | | | 779.600 | | | | 786.500 | 786.625 |
| **22** | | | | 784.550 | | | | | | | | |
| **23** | | | | | | | | | | | | |
| **24** | | | | | | | | | | | | |
| **25** | | | | | | | | 747.325 | 740.575 | 747.525 | | |
| **26** | | | | | | | | 750.000 | 754.950 | 750.200 | | |
| **27** | | | | | | | | 782.950 | | 783.150 | | |
| **28** | | | | | | | | | | | | |
| **29** | | | | | | | | 763.450 | 745.850 | 763.650 | | |
| **30** | | | | | | | | 763.925 | 754.200 | 764.125 | | |
| **31** | | | | | | | | 764.650 | 772.325 | 764.850 | | |
| **32** | | | | | | | | 765.575 | 773.250 | 765.775 | | |
| **33** | | | | | | | | 783.700 | 773.975 | 783.900 | | |
| **34** | | | | | | | | | 774.450 | | | |
| **35** | | | | | | | | 741.675 | 747.900 | 741.875 | | |
| **36** | | | | | | | | 761.750 | 751.825 | 761.950 | | |
| **37** | | | | | | | | 786.075 | 776.150 | 786.275 | | |
| **38** | | | | | | | | | | | | |
| **39** | | | | | | | | 741.275 | 748.275 | 780.925 | | |
| **40** | | | | | | | | 747.825 | 781.200 | 785.200 | | |
| **41** | | | | | | | | 780.700 | 782.450 | | | |
| **42** | | | | | | | | 784.975 | 782.925 | | | |
| **43** | | | | | | | | | 783.875 | | | |
| **44** | | | | | | | | | 785.800 | | | |
| **45** | | | | | | | | | 786.775 | | | |

## R16, R18 FREQUENCY BANDS

| TRANSMITTER POWER | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **R16** | 10 mW | | | | 50 mW | | | |
| **R18** | 10 mW | | | | | | | |
| **Channel** | **Group 1** | **Group 2** | **Group 3** | **Group 4** | **GROUP 5** | **GROUP 6** | **GROUP 7** | **GROUP 8** |
| 1 | 794.300 | 794.125 | 794.250 | 794.425 | 794.325 | 794.200 | 794.350 | 794.475 |
| 2 | 794.600 | 794.425 | 794.625 | 794.800 | 794.725 | 794.600 | 795.925 | 796.050 |
| 3 | 795.250 | 795.075 | 795.750 | 795.925 | 795.525 | 795.400 | 796.775 | 796.900 |
| 4 | 795.725 | 795.550 | 797.425 | 797.600 | 796.050 | 795.925 | 798.225 | 798.350 |
| 5 | 796.400 | 796.225 | 798.325 | 798.500 | 796.925 | 796.800 | 801.025 | 801.150 |
| 6 | 797.350 | 797.175 | 801.800 | 801.975 | 797.550 | 797.425 | 801.750 | 801.875 |
| 7 | 797.850 | 797.675 | 802.600 | 802.775 | 797.975 | 797.850 | 803.075 | 803.200 |
| 8 | 798.750 | 798.575 | 803.425 | 803.600 | 798.575 | 798.450 | 803.575 | 803.700 |
| 9 | 800.800 | 800.625 | 803.825 | 804.000 | 801.875 | 801.750 | 804.775 | 804.900 |
| 10 | 801.975 | 801.800 | 805.600 | 805.775 | 802.650 | 802.525 | 805.750 | 805.875 |
| 11 | 802.475 | 802.300 | | | 803.100 | 802.975 | | |
| 12 | 803.400 | 803.225 | | | 803.750 | 803.625 | | |
| 13 | 803.925 | 803.750 | | | 804.100 | 803.975 | | |
| 14 | 804.625 | 804.450 | | | 804.650 | 804.525 | | |
| 15 | 805.025 | 804.850 | | | 805.375 | 805.250 | | |
| 16 | 805.600 | 805.425 | | | | | | |

## FCC DECLARATION OF CONFORMITY

We, Shure Incorporated
of 5800 W. Touhy Avenue
Niles, IL 60714-4608, U.S.A.
(847) 600-2000

Declare under our sole responsibility that the following product

Model: UR4S and UR4D Description: UHF Receivers

Has been tested and found to comply with the limits for an unintentional radiator device, and approved under the Declaration of Conformity provision of the Part 15 of the FCC rules.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Signed Date January 6 2005

Name, Title Craig Kozokar
EMC Project Engineer, Corporate Quality, Shure Incorporated


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